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THE JOURNAL

OF

MENTAL SCIENCE.

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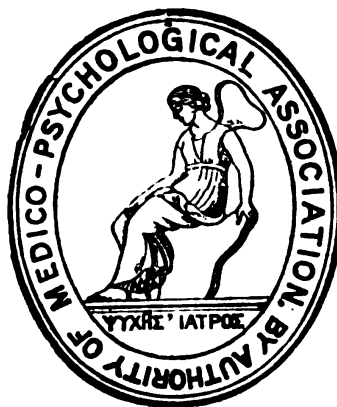
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MDCCCXVIII.

" In adopting our title of the *Journal of Mental Science*, published by authority of the Medico-Psychological Association, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the term mental physiology or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid; for although we do not eschew metaphysical discussion, the aim of this JOURNAL is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our JOURNAL is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanic uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow-men may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study."—Sir J. C. Bucknill, M.D., F.R.S.

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1911. Wm. R. Dawson, B.A., M.D., F.R.C.P.I., D.P.H., Inspector of Lunatic Asylums, Dublin Castle, Dublin.
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Naples, Italy. (*Corr. Mem.*, 1896.)
1900. Blumer, G. Alder, M.D., L.R.C.P. Edin., Butler Hospital, Providence,
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1908. Anderson, James Richard Sumner, M.B., Ch.B.Glas., Senior Assistant Medical Officer, Cumberland and Westmorland Asylum, Garlands, Carlisle.
1898. Anderson, John Sewell, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Hull City Asylum, Willerby, near Hull.
1912. †Annandale, James Scott, M.B., Ch.B.Edin., Second Assistant Physician, District Asylum, Murthly, Perth; *R.A.M.C.*
1912. Apthorp, Frederick William, M.R.C.S.Eng., L.R.C.P.Edin., M.P.C., Senior Medical Officer, St. George's Retreat, Ravensworth, Burgess Hill.
1904. †Archdale, Mervyn Alex., M.B., B.S.Durh., (Medical Superintendent, East Riding Asylum, Beverley, Yorks); Capt. *R.A.M.C.*, *T.F.*, No. 16, General Hospital, British Expeditionary Force.
1905. Archdall, Mervyn Thomas, L.R.C.P.&S.Edin., L.S.A.Lond., Brynn-y-Nenadd Hall, Llanfairfechan, N. Wales.
1882. †Armstrong-Jones, Sir Robert, M.D.Lond., B.S., F.R.C.P., F.R.C.S.Eng., 9, Bramham Gardens, S.W. (and Plas Dinas, Carnarvon, North Wales; Hon. Major *R.A.M.C.* (*Gen. Secretary from 1897 to 1906.*) (*PRESIDENT 1906-7.*)
1910. †Auden, G. A., M.A., M.D., B.C., D.P.H.Cantab., M.R.C.P.Lond., F.S.A. (Medical Superintendent, Educational Offices, Edmund Street, Birmingham); Captain *R.A.M.C. (T.) on active service.*
1891. Aveline, Henry T. S., M.D.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, County Asylum, Cotford, near Taunton, Somerset. (*Hon. Sec. for S.W. Division, 1905-11.*)
1903. Bailey, William Henry, M.D.Lond., M.R.C.S.Eng., L.S.A., D.P.H.Lond., Featherstone Hall, Southall, Midd.
1894. Baily, Percy J., M.B., C.M.Edin., 24, Barrack Road, Bexhill-on-Sea.
1909. †Bain, John, M.A., M.B., B.Ch.Glasg.; Lt. *R.A.M.C.* (address uncommunicated).
1913. †Bainbridge, Charles Frederick, M.B., Ch.B.Edin., Surg. *R.N.R.* Assistant Medical Officer, Devon County Asylum, Exeter.
1906. Baird, Harvey, M.D., Ch.B.Edin. (Periteau, Winchelsea, Sussex); Lieut. *R.A.M.C.*

1878. Baker, H. Morton, M.B., C.M.Edin., 7, Belsize Square, London, N.W. 3.
1888. Baker, John, M.D., C.M.Aberd., Medical Superintendent, State Asylum, Broadmoor, Berks.
1916. †Ballard, E. F. (13, Lyndhurst Road, Hove, Sussex); Capt. *R.A.M.C. (T.)*
1904. Barham, Guy Foster, M.A., M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Acting Medical Superintendent, Claybury Asylum, Woodford Bridge, Essex.
1913. †Barkley, James Morgan, M.B., Ch.B.Edin. (Senior Medical Officer, Bracebridge Asylum, Lincolnshire); c/o Dr. J. B. Hunter, Bracebridge Heath, Lincoln; Capt. *R.A.M.C.*
1910. Bartlett, George Norton, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, City Asylum, Exeter.
1901. †Baskin, J. Loughheed, M.D.Brux., L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., Capt. *R.A.M.C.*; attd. 42 *R.G.A.*
1902. Baugh, Leonard D. H., M.B., Ch.B.Edin., The Pleasaunce, York.
1874. Beach, Fletcher, M.B., F.R.C.P.Lond., *formerly Medical Superintendent, Darenth Asylum, Dartford*; Cane Hill, Coulsdon, Surrey. (*Secretary Parliamentary Committee, 1896-1906. General Secretary, 1889-1896. PRESIDENT, 1900.*)
1892. Beadles, Cecil F., M.R.C.S., L.R.C.P.Lond., Gresham House, Egham Hill, Egham.
1902. Beale-Browne, Thomas Richard, M.R.C.S.Eng., L.R.C.P.Lond., c/o P.M.O. Lagos, Nigeria, West Africa.
1913. Bedford, Percy William Page, M.B., Ch.B.Edin., County Asylum, Lancaster.
1909. †Beeley, Arthur, M.Sc.Leeds, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., D.P.H.Camb. (*Assistant Medical Officer, E. Sussex Educational Committee*), Windybank, Kingston Road, Lewes; *R.A.M.C.*
1914. †Bennett, James Wodderspoon, M.R.C.S., L.R.C.P.Lond. (Marsden, Ilkley, Yorks); Capt. *R.A.M.C.*, 10th Batt., Duke of Wellington W.R.R.
1912. Benson, Henry Porter D'Arcy, M.D., C.M.Edin., M.R.C.P., F.R.C.S. Edin., Medical Superintendent, Farnham House, Finglas, Dublin.
1914. †Benson, John Robinson, F.R.C.S.Eng., L.R.C.P.Lond., Resident Physician and Proprietor, Fiddington House, Market Lavington, Wilts.
1899. Beresford, Edwyn H., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Tooting Bec Asylum, Tooting, S.W. 17.
1912. Berncastle, Herbert M., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Croydon Mental Hospital, Warlingham, Surrey.
1879. Bevan-Lewis, William, M.Sc.Leeds, M.R.C.S., L.R.C.P.Lond., Elsinore, Dyke Road Avenue, Brighton. (*PRESIDENT, 1909-10.*)
1894. †Blachford, James Vincent, M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C. (City Asylum, Fishponds, Bristol); Lt.-Col. *R.A.M.C.*, Beaufort War Hospital, Bristol.
1913. Black, Robert Sinclair, M.A.Edin., M.D., C.M.Aberd., D.P.H., M.P.C., Medical Supt., Pietermaritzburg Mental Hospital, Natal, South Africa.
1898. Blair, David, M.A., M.D., C.M.Glasg., County Asylum, Lancaster.
1897. Blandford, Joseph John Guthrie, B.A., D.P.H.Camb., M.R.C.S., L.R.C.P.Lond.; Rainhill Asylum, Lancashire.
1904. Bodvel-Roberts, Hugh Frank, M.A.Cantab., M.R.C.S., L.R.C.P.Lond., L.S.A., Middlesex County Asylum, Napsbury, near St. Albans, Herts.
1900. Bolton, Joseph Shaw, M.D., B.S., D.Sc., F.R.C.P.Lond., Medical Superintendent, West Riding Asylum, Wakefield.
1892. Bond, Charles Hubert, D.Sc., M.D., C.M.Edin., M.R.C.P.Lond., M.P.C., Commissioner of the Board of Control, 66, Victoria Street, S.W. 1. (*Hon. General Secretary, 1906-12.*)
1877. Bower, David, M.D., C.M.Aber., Springfield House, Bedford. (*Chairman Parliamentary Committee, 1907-1910.*)
1877. Bowes, John Ireland, M.R.C.S.Eng., L.S.A. (address uncommunicated.)
1917. †Bowie, Edgar Ormond, L.A.H.Dub., Dip. Grant Med. Coll. Bombay, L.M.Coombe, Dublin; Lieut. *I.M.S. (T.)*; c/o W. H. Halliburton, Esq., 18, South Frederick Street, Dublin.

1900. Bowles, Alfred, M.R.C.S., L.R.C.P.Lond., 10, South Cliff, Eastbourne.
1896. Boycott, Arthur N., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Herts County Asylum, Hill End, St. Albans, Herts. (*Hon. Sec. for S.-E. Division*, 1900-05.)
1898. Boyle, A. Helen A., M.D.Bruce., L.R.C.P.&S.Edin., 9, The Drive, Hove, Brighton.
1883. Boys, A. H., L.R.C.P.Edin., M.R.C.S.Eng., L.S.A.Lond., The White House, St. Albans.
1891. Braine-Hartnell, George M. P., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County and City Asylum, Powick, Worcester.
1911. Brander, John, M.B., C.B.Edin., Assistant Medical Officer, London County Asylum, Bexley, Kent.
1905. †Brown, Harry Egerton, M.D., Ch.B.Glas., M.P.C. (Mental Hospital, Fort Beaufort, Cape Province, S. Africa) Major, *S. A. Medical Corps*.
1908. †Brown, Robert Cunyngham, M.D., B.S.Durb. (General Board of Lunacy, 25, Palmerston Place, Edinburgh); Major, *R.A.M.C.*, Administrator, Springburn and Woodside Central Hospital, Glasgow.
1908. Brown, R. Dods, M.D., Ch.B., F.R.C.P., Dipl. Psych., D.P.H.Edin., Physician Superintendent, James Murray's Royal Asylum, Perth.
1912. †Brown, William, M.D., C.M.Glas., M.P.C., District Medical Officer, Adviser in Lunacy to Bristol Magistrates (1, Manor Road, Fishponds, Bristol); Capt. *R.A.M.C.*, 2nd Southern General Hospital, Southmead, Bristol.
1916. Brown, William, M.A., M.B., B.Ch.Oxon., D.Sc.Lond., Reader in Psychology in the University of London (King's College), (King's College, Strand, W.C. 2). Capt. *R.A.M.C.*
1917. †Bruce, Alexander Ninian, M.D., D.Sc., F.R.C.P.E., Lecturer on Neurology, University of Edinburgh, 8, Ainslie Place, Edinburgh; Capt. (Temp.) *R.A.M.C.*
1893. †Bruce, Lewis C., M.D., F.R.C.P.Edin., M.P.C. (Medical Superintendent, District Asylum, Druid Park, Murthly, N.B.); Scottish Horse Brigade, Mediterranean Expeditionary Force. (*Co-Editor of Journal* 1911-1916; *Hon. Sec. for Scottish Division*, 1901-1907.)
1913. †Brunton, George Llewellyn, M.D., Ch.B.Edin. (North Riding Asylum, Clifton, York); temp. Lt., *R.A.M.C.*, 2nd Cavalry Field Ambulance, British Expeditionary Force, France.
1912. †Buchanan, William Murdoch, M.B., Ch.B.Glas., Kirklands Asylum, Bothwell, Lanarkshire. Temp. Lieut. *R.A.M.C.*
1908. Bullmore, Charles Cecil, J.P., L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., Medical Superintendent, Flower House, Catford.
1911. Buss, Howard Decimus, B.A., B.Sc.France, M.D.Bruce.&Cape, M.R.C.S., L.R.C.P., L.M.S.S.A.Lond., Assistant Medical Officer, Fort Beaufort Asylum, Cape Colony.
1910. †Cahir, John P., M.B., B.Ch.R.U.I., 198, Camberwell New Road, Camberwell, S.E. 5; Lieut. *R.A.M.C.*
1891. Caldecott, Charles, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Earlswood Asylum, Redhill, Surrey.
1913. †Cameron, John Allan Munro, M.B., Ch.B.Glas. (Pathologist, Scalebor Park Asylum, Burley-in-Wharfedale, Yorks); *R.A.M.C.*, British Expeditionary Force.
1894. Campbell, Alfred Walter, M.D., C.M.Edin., M.P.C., Macquarie Chambers, 183, Macquarie Street, Sydney, New South Wales.
1909. †Campbell, Donald Graham, M.B., C.M.Edin. ("Auchinellan," 12, Reidhaven Street, Elgin); Major *R.A.M.C. (T.) on active service*.
1914. †Campbell, Finlay Stewart, M.D., C.M.Glas., Deputy Director of Medical Services, Ministry of National Service, Ayr, Scotland.
1880. Campbell, Patrick E., M.B., C.M.Edin., Medical Superintendent, Metropolitan Asylum, Caterham, Surrey.
1897. Campbell, Robert Brown, M.D., C.M., F.R.C.P.E., Medical Superintendent, Stirling District Asylum, Larbert. (*Secretary for Scottish Division from 1910.*)

1905. Carre, Henry, L.R.C.P.&S.Irel., Woodilee Asylum, Lenzie, Glasgow.
1891. Carswell, John, L.R.C.P.Edin., L.R.F.P.&S.Glasg., 43, Moray Place, Edinburgh; Commissioner-General, Board of Control, Scotland.
1874. Cassidy, D. M., M.D., C.M.McGill Coll., Montreal, D.Sc. (Public Health) F.R.C.S.Edin., Medical Superintendent, County Asylum, Lancaster; *R.A.M.C.*
1888. Chambers, James, M.A., M.D.R.U.I., M.P.C., The Priory, Roehampton, S.W. 15 (*Co-Editor of Journal* 1905-1914, *Assistant Editor* 1900-05.) (*PRESIDENT*, 1913-14.) (*Treasurer*, 1917.)
1911. †Chambers, Walter Duncanou, M.A., M.D., Ch.B.Edin., M.P.C., Capt. *R.A.M.C.*, Inniskillings (address uncommunicated).
1865. Chapman, Thomas Algernon, M.D.Glas., L.R.C.S.Edin., F.Z.S., Betula, Reigate.
1915. Cheyne, Alfred William Harper, M.B., Ch.B.Aber., Assistant Medical Officer, Royal Asylum, Aberdeen.
1917. Chisholm, Percy, L.R.C.P. & S.Edin., Assistant Medical Officer, Stirling District Asylum, Larbert.
1907. Chislett, Charles G. A., M.B., Ch.B.Glasg., Medical Superintendent, Stonevetts, Chryston, Lanark.
1880. Christie, J. W. Stirling, L.R.C.P.&S.Edin., Medical Superintendent, County Asylum, Stafford.
1878. Clapham, Wm. Crochley S., M.D., F.R.C.P.Ed., M.R.C.S.Eng., F.S.S., The Five Gables, Mufield, Sussex. (*Hon. Sec. N. and M. Division*, 1897-1901.)
1907. †Clarke, Geoffrey, M.D.Lond. (Senior Assistant Medical Officer, London County Asylum, Banstead, Sutton, Surrey); Lieut. *R.A.M.C.*, No. 24 General Hospital, British Expeditionary Force.
1910. †Clarke, James Kilian P., M.B., B.Ch.R.U.I., D.P.H., High Street, Oakham; *R.A.M.C.*
1907. Clarkson, Robert Durward, B.Sc., M.D., C.M.Edin., F.R.C.P.Edin. (Medical Officer, Scottish National Institute for the Education of Imbecile Children), The Park, Larbert, Stirling.
1892. Cole, Robert Henry, M.D.Lond., F.R.C.P.Lond., 25, Upper Berkeley Street, W. 1. (*Secretary of Parliamentary Committee since* 1912.)
1900. Cole, Sydney John, M.A., M.D., B.Ch.Oxon., Medical Superintendent, Wilts County Asylum, Devizes.
1906. Collier, Walter Edgar, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Kent County Asylum, Maidstone.
1903. †Collins, Michael Abdy, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond. (Medical Superintendent, Ewell Colony, Epsom, Surrey) (*Hon. General Secretary since* 1912.); Capt. *R.A.M.C.*, British Expeditionary Force.
1910. Conlon, Thomas Peter, L.R.C.P.&S.Irel., Resident Medical Superintendent, District Asylum, Monaghan.
1914. †Connolly, Victor Lindley, M.B., B.Ch.Belfast (Assistant Medical Officer Colney Hatch Asylum, N.); Lieut. *R.A.M.C.*
1878. Cooke, Edward Marriott, M.D.Lond., M.R.C.S.Eng., Commissioner in Lunacy; Acting Chairman Board of Control, 69, Onslow Square, S.W. 7.
1910. Coombes, Percival Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Surrey County Asylum, Netherne.
1905. Cooper, K. D., L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., c/o Leopold & Co. Apollo, Bunder, Bombay.
1903. Cormac, Harry Dove, M.B., B.S.Madras, Medical Superintendent, Cheshire County Asylum, Macclesfield.
1891. Corner, Harry, M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., 37, Harley Street, W. 1.
1917. Costello, Christopher, M.B., Assistant Medical Officer, Portrane Asylum, Ireland.
1905. Cotter, James, L.R.C.P.&S.E., L.R.F.P.&S.Glas., Down District Asylum, Downpatrick.

1897. Cotton, William, M.A., M.D.Edin., D.P.H.Cantab., M.P.C. (c/o D. N. Cotton, Esq., 9, St. David Street, Edinburgh); Capt. *R.A.M.C.*, 20, General Hospital, B.E.F., France.
1910. Coupland, William Henry, L.R.C.S.&P.Edin., Medical Superintendent, Royal Albert Institution, Albert House, Haverbreaks, Lancaster.
1913. Court, E. Percy, M.R.C.S., L.R.C.P.Lond., Severalls Asylum, Colchester.
1893. Cowen, Thomas Philip, M.D., B.S. M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County Asylum, Rainhill, Lancashire.
1911. Cox, Donald Maxwell, M.R.C.S., L.R.C.P.Lond. (2, Royal Park, Clifton, Bristol); Lieut. *R.A.M.C.*
1893. Craig, Maurice, M.A., M.D., B.C.Cantab., F.R.C.P.Lond., M.P.C., 87, Harley Street, W. 1. (*Hon. Secretary of Educational Committee, 1905-8; Chairman of Educational Committee since 1912.*)
1897. Cribb, Harry Gifford, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Winterton Asylum, Ferryhill, Durham.
1911. Crichtlow, Charles Adolphus, M.B., Ch.B.Glas. Roxburgh District Asylum, Melrose.
1917. Crocket, James, M.D.Edin., D.P.H., Medical Superintendent, Colony of Mercy for Epileptics, Consumption Sanatoria of Scotland, Craigielea, Bridge of Weir.
1914. Crookshank, Francis Graham, M.D., M.R.C.P.Lond., 15, Harley Street, W. 1.
1904. Cross, Harold Robert, L.S.A.Lond., F.R.G.S., Storthes Hall Asylum, Kirkburton, near Huddersfield.
1915. Crosthwaite, Frederick Douglas, M.B., Ch.B.Edin., D.P.H.Cantab., Assistant Physician, Pretoria Mental Hospital, South Africa.
1914. Cruickshank, J., M.D., Ch.B.Glas., Pathologist, Crichton Royal Hospital, Dumfries.
1907. Daniel, Alfred Wilson, B.A., M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Acting Medical Superintendent, London County Asylum, Hanwell, W. 7.
1896. Davidson, Andrew, M.D., C.M.Aber., M.P.C., Wyoming, Macquarie Street, Sydney, N.S.W.
1914. Davies, Laura Katherine, M.B., Ch.B.Edin., Pathologist and Assistant Medical Officer, Edinburgh City Asylum, Bangour, Dechmont, Linlithgowshire.
1891. †Davis, Arthur N., L.R.C.P.&S.Edin. (Medical Superintendent, County Asylum, Exminster, Devon); Major *R.A.M.C.*, *T.F.*
1894. †Dawson, William R., B.A., M.D., B.Ch.Dubl., F.R.C.P.I., D.P.H., Inspector of Lunatics in Ireland, 7, Ailesbury Road, Dublin. (*Hon. Sec. to Irish Division, 1902-11; PRESIDENT, 1911-12.*) Lt.-Col. *R.A.M.C.*
1901. De Steiger, Adèle, M.D.Lond., County Asylum, Brentwood, Essex.
1905. Devine, Henry, M.D., B.S., M.R.C.P.Lond., M.R.C.S.Eng., M.P.C., Medical Superintendent, The Asylum, Milton, Portsmouth (Assistant Editor of the Journal since 1916).
1904. Devon, James, L.R.C.P. & S.Edin., 1, North Park Terrace, Hillhead, Glasgow.
1903. Dickson, Thomas Graeme, L.R.C.P. & S.Edin., Medical Superintendent, Wye House Asylum, Buxton, Derbyshire.
1915. †Dillon, Frederick, M.B., Ch.B.Edin., (Clinical Assistant, West End Hospital for Nervous Diseases, Assistant Medical Officer, Northumberland House, Green Lanes, Finsbury Park, N. 4.); Lieut. *R.A.M.C. on active service*, Craighenall, Falkirk, N.B.
1909. Dillon, Kathleen, L.R.C.P.&S.I., Assistant Medical Officer, District Asylum, Mullingar.
1905. †Dixon, J. Francis, M.A., M.D., B.Ch.Dubl., M.P.C. (Medical Superintendent, Borough Mental Hospital, Humberstone, Leicester); Major *R.A.M.C.*
1879. Dodds, William J., M.D., C.M., D.Sc.Edin., Glencoil, Bellahouston, Glasgow.

1908. Donald, Robert, M.D., Ch.B.Glas., 3, Gilmour Street, Paisley.
1889. †Donaldson, William Ireland, B.A., M.D., B.Ch.Dubl., Medical Superintendent (County of London Manor Asylum, Epsom, Surrey). Lt.-Col. *R.A.M.C.* O.C. Manor County of London War Hospital, Epsom.
1892. Donelan, John O'Connor, L.R.C.P.&S.I., M.P.C., St. Dymphna's, North Circular Road, Dublin (Med. Supt., Richmond Asylum, Dublin).
1890. Douglas, William, M.D.R.U.I., M.R.C.S.Eng., F.R.G.S., Brandfold, Goudhurst, Kent.
1905. Dove, Augustus Charles, M.D., B.S.Durh., M.R.C.S.Eng., "Brightside," Crouch End Hill, N. 2.
1897. Dove, Emily Louisa, M.B.Lond., 11, Jenner House, Hunter Street, Brunswick Square, W.C. 1.
1903. Dow, William Alex., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., D.P.H., H.M. Prison, Lewes.
1910. Downey, Michael Henry, M.B., Ch.B.Melb., L.R.C.P. & S.Edin., L.R.F.P. & S. Glasg., Assistant Medical Officer, Parkside Asylum, Adelaide, South Australia.
1884. Drapes, Thomas, M.B.Dubl., L.R.C.S.I., Medical Superintendent, District Asylum, Enniscorthy, Ireland. (PRESIDENT-ELECT, 1910-11; *Co-Editor of Journal since 1912.*)
1916. Drummond, William Blackley, M.B., C.M.Edin., F.R.C.P., Medical Superintendent, Baldovan Institution, Dundee.
1907. Dryden, A. Mitchell, M.B., Ch.B.Edin., Senior A.M.O., Woodilee Mental Hospital, Lenzie.
1902. Dudgeon, Herbert Wm., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Khanka Government Asylum, Egypt.
1899. Dudley, Francis, L.R.C.P. & S.I., Senior Assistant Medical Officer, County Asylum, Bodmin, Cornwall.
1915. Duff, Thomas, L.R.C.P., L.R.C.S.Edin., L.R.F.P. & S.Glasg., Collington Rise, Bexhill-on-Sea.
1917. Dunn, Edwin Lindsay, M.B., B.Ch.Dub., Medical Superintendent, Berks County Asylum, Wallingford, Berks.
1903. Dunston, John Thomas, M.D., B.S.Lond., Medical Superintendent, West Koppias Asylum, Pretoria, South Africa.
1911. †Dykes, Percy Armstrong, M.R.C.S., L.R.C.P.Lond., c/o Messrs. Holt and Co., 3, Whitehall Place, S.W. 1. Capt *R.A.M.C.*
1899. Eades, Albert I., L.R.C.P. & S.I., Medical Superintendent, North Riding Asylum, Clifton, Yorks.
1906. †Eager, Richard, M.D., Ch.B.Aber., M.P.C. (Assistant Medical Officer, Devon County Asylum, Exminster); Major *R.A.M.C., T.F.*, The Lord Derby War Hospital, Warrington, Lancs.
1873. Eager, Wilson, M.R.C.S., L.R.C.P., L.S.A.Lond., St. Aubyn's, Woodbridge, Suffolk.
1881. Earle, Leslie M., M.D., C.M.Edin., 108, Gloucester Terrace, Hyde Park W. 2.
1891. Earls, James Henry, M.D., M.Ch.R.U.I., D.P.H., L.S.A.Lond., M.P.C., Barrister-at-Law, Fenstanton, Christchurch Road, Streatham Hill, S.W. 2.
1907. East, Wm. Norwood, M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., H.M. Prison, Manchester; also 171, Cheetham Hill Road, Manchester.
1895. Easterbrook, Charles C., M.A., M.D., F.R.C.P.Ed., M.P.C., J.P., Physician Superintendent, Crichton Royal Institution, Dumfries.
1914. Eder, M. D., B.Sc.Lond., M.R.C.S., L.R.C.P.Lond. (Medical Officer, Deptford School Clinic), 37, Welbeck Street, W. 1.
1895. Edgerley, Samuel, M.A., M.D., C.M.Edin., M.P.C., Medical Superintendent, West Riding Asylum, Menston, nr. Leeds.
1897. Edwards, Francis Henry, M.D.Bru., M.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent, Camberwell House, S.E. 5.

- 1901 †Elgee, Samuel Charles, L.R.C.P.&S.I. (Colney Hatch Asylum, New Southgate). The Manor (County of London) War Hospital, Epsom; Major *R.A.M.C.*
1889. Elkins, Frank Ashby, M.D., C.M.Edin., M.P.C., Medical Superintendent, Metropolitan Asylum, Leavesden, Herts.
1912. Ellerton, John Frederick Heise, M.D.Brux., M.R.C.S.Eng., L.R.C.P. Edin., Rotherwood, Leamington Spa.
1917. Ellis, Vincent C., M.B., Assistant Medical Officer, Portrane Asylum, Ireland.
1908. Ellison, Arthur, M.R.C.S., L.R.C.P.Eng., Deputy Medical Officer, H.M. Prison, Leeds, 120, Domestic Street, Holbeck, Leeds.
1899. Ellison, F. C., B.A., M.D., B.Ch.Dub., Resident Medical Superintendent, District Asylum, Castlebar.
1911. Emslie, Isabella Galloway, M.D., Ch.B.Edin., West House, Royal Asylum, Morningside, Edinburgh.
1911. English, Ada, M.B., B.Ch.R.U.I., Assistant Medical Officer, District Asylum, Ballinasloe.
1901. Erskine, Wm. J. A., M.D., C.M.Edin., Medical Superintendent, County Asylum, Whitecroft, Newcroft, I. of W.
1895. Eurich, Frederick Wilhelm, M.D., C.M.Edin., 8, Mornington Villas, Maningham Lane, Bradford.
1894. Eustace, Henry Marcus, B.A., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, Hampstead and Highfield Private Asylum, Glasnevin, Dublin.
1909. Eustace, William Neilson, L.R.C.S.&P.Irel., 38th General Hospital, Salonika, c/o G.P.O., E.C. I.
1909. Evans, George, M.B.Lond., Senior Assistant Medical Officer, Severalls Asylum, Colchester.
1891. Ewan, John Alfred, M.A. St. And., M.D., C.M.Edin., M.P.C., Greylees, Sleaford, Lincs.
1914. Ewing, Cecil Wilmot, L.R.C.P.I. & L.R.C.S.I., Second Assistant Medical Officer, Chartham Asylum, near Canterbury.
1907. Exley, John, L.R.C.P.I., M.R.C.S.Eng., Medical Officer, H.M. Prison; Grove House, New Wortley, Leeds.
1894. Farquharson, William F., M.D., C.M.Edin., M.P.C., Medical Superintendent, Counties Asylum, Garlands, Carlisle.
1907. †Farries, John Stothart, L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., *R.N.R.*, communications to Yrthington, Carlisle.
1917. Fearnside, Edwin Greaves, M.D.Camb., B.C., M.A., 46, Queen Anne Street, Cavendish Square, W. 1.
1903. †Fennell, Charles Henry, M.A., M.D.Oxon, M.R.C.P.Lond., Reform Club, Pall Mall, S.W.; Lieut. *R.A.M.C.*
1908. Fenton, Henry Felix, M.B., Ch.B.Edin., Assistant Medical Officer, County and City Asylum, Powick, Worcester.
1907. Ferguson, J. J. Harrower, M.B., Ch.B.Edin., Senior Assistant Medical Officer, Fife and Kinross Asylum, Cupar, Fife.
1906. Fielding, Saville James, M.B., B.S.Durh., Medical Superintendent, Bethel Hospital, Norwich.
1873. Finch, John E. M., M.A., M.D.Cantab., M.R.C.S.Eng., L.S.A.Lond., Holmdale, Stoneygate, Leicester.
1889. Finlay, David, M.D., C.M.Glasg., Medical Superintendent, County Asylum, Bridgend, Glamorgan.
1906. Firth, Arthur Marcus, M.A., M.D., B.Ch.Edin., Deputy Medical Superintendent, Barnsley Hall, Bromsgrove, Worcestershire.
1903. Fitzgerald, Alexis, L.R.C.P. & S.I., Medical Superintendent, District Asylum, Waterford.
1888. Fitz-Gerald, Gerald C., B.A., M.D., B.C.Cantab., M.P.C., Medical Superintendent, Kent County Asylum, Chartham, nr. Canterbury.
1908. Fitzgerald, James Francis, L.R.C.P.&S.Irel., Assistant Medical Officer, District Asylum, Clonmel, co. Tipperary, Ireland.
1904. Fleming, Wilfrid Louis Remi, M.R.C.S., L.R.C.P.Lond., Suffolk House, Pirbright, Surrey.

1894. Fleury, Eleonora Lilian, M.D., B.Ch.R.U.I., Assistant Medical Officer, Richmond Asylum, Dublin.
1908. †Flynn, Thos. Aloysius, L.R.C.P.&S.I., (County Asylum, Thorpe, Norwich); *R.A.M.C.*
1902. Forde, Michael J., M.D., B.Ch.R.U.I., Assistant Medical Officer, Richmond Asylum, Dublin.
1911. Forrester, Archibald Thomas William, M.D., B.S., M.R.C.S., L.R.C.P. Lond., Senior Assistant Medical Officer, Leicester and Rutland Counties Asylum, Narborough.
1916. †Forsyth, Charles Wesley, M.B.Lond., M.R.C.S., L.R.C.P. (Assistant Medical Officer, Kesteven County Asylum, Sleaford, Lincs.); Temp. Lieut. *R.A.M.C.*
1913. †Forward, Ernest Lionel, M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, The Coppice, Nottingham); Capt. *R.A.M.C.*, 2/2 East Lancs. Field Ambulance.
1913. Fothergill, Claude Francis, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P. Lond.; Hensol, Chorley Wood, Herts.
1912. Fox, Charles J., M.R.C.S., L.R.C.P.Lond., The Moat House, Alnechurch Birmingham.
1881. Fraser, Donald, M.D., C.M.Glasg., F.R.F.P.S., 13, Royal Terrace West, Glasgow.
1901. †French, Louis Alexander, M.R.C.S., L.R.C.P.Lond., "Locksley," Willingdon, Eastbourne; Major *R.A.M.C.*
1902. Fuller, Lawrence Otway, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Three Counties' Asylum, Arlesey, Beds.
1914. †Gage, John Munro, L.R.C.P.&S.I., M.P.C., Temp. Capt. *R.A.M.C.* Royal Earlswood Institution, Redhill, Surrey.
1906. Gane, Edward Palmer Steward, M.D.Durh., M.R.C.S., L.R.C.P.Lond., City Asylum, Willerby, Hull.
1912. Garry, John William, M.B., B.Ch., N.U.I., Assistant Medical Officer Ennis District Asylum, Ireland.
1912. Gavin, Lawrence, M.B., Ch.B.Edin., L.R.C.P.&S.Edin., L.R.F.P.&S. Glasg., Superintendent, Mullingar District Asylum, Ireland.
1896. Geddes, John W., M.B., C.M.Edin., Medical Superintendent, Mental Hospital, Middlesbrough, Yorks.
1892. Gemmel, James Francis, M.B.Glasg., Medical Superintendent, County Asylum, Whittingham, Preston.
1914. Gettings, Harold Salter, L.R.C.P. & S.Edin., L.R.F.P.&S.G., D.P.H.Birm., Inoculation Dept., St. Mary's Hospital, Paddington.
1899. Gilfillan, Samuel James, M.A., M.B., C.M.Edin., Medical Superintendent, London County Asylum, Colney Hatch.
1912. Gill, Eustace Stanley Hayes, M.B., Ch.B.Liverp., Shaftesbury House, Formby, Liverpool.
1889. Gill, Stanley A., B.A.Dubl., M.D.Durh., M.R.C.P.Lond., M.R.C.S.Eng., Shaftesbury House, Formby, Liverpool.
1904. †Gillespie, Daniel, M.D. B.Ch.R.U.I., Dipl. Psych. (Wadsley Asylum, near Sheffield); Maj. *R.A.M.C.*, Wharnccliffe War Hospital, Middleton Road, Sheffield.
1897. Gilmour, John Rutherford, M.B., C.M., F.R.C.P.Edin., M.P.C., Medical Superintendent, West Riding Asylum, Scalebor Park, Burley-in-Wharfedale, Yorks.
1906. Gilmour, Richard Withers, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Homewood House, West Meon, Hants.
1878. Glendinning, James, M.D.Glasg., L.R.C.S.Edin. Hill Crest, Lansdown Road, Abergavenny.
1897. Good, Thomas Saxty, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, County Asylum, Littlemore, Oxford.
1889. †Goodall, Edwin, M.D., B.S., F.R.C.P.Lond., M.P.C. (Medical Superintendent, City Asylum, Cardiff); Lt.-Col. *R.A.M.C.*, The Welsh Metropolitan War Hospital, Whitchurch, nr. Cardiff.

1899. †Gordon, James Leslie, M.D., C.M.Aberd. (Medical Superintendent, Fountain Temporary Asylum, Tooting Grove, Tooting Graveney, S.W. 17.); Temp. Lieut. *R.A.M.C.*
1905. Gordon-Munn, John Gordon, M.D.Edin., F.R.S.E., Heigham Hall, Norwich.
1901. †Gostwyck, C. H. G., M.B., Ch.B., F.R.C.P.Edin., M.P.C., Dipl. Psych., (Stirling District Asylum, Larbert); Lt., *R.A.M.C. on active service.*
1912. †Graham, Gilbert Malise, M.B., Ch.B.Edin., R.N., H.M.S. "Emperor of India."
1914. †Graham, Norman Bell, B.A., R.U.I., M.B., B.Ch.Belfast, (Assistant Medical Officer, District Asylum, Belfast); Capt. *R.A.M.C.*, 24, Ocean Buildings, Belfast.
1894. Graham, Samuel, L.R.C.P.Lond., Resident Medical Superintendent, District Asylum, Antrim.
1908. Graham, William S., M.B., B.Ch.R.U.I., Assistant Medical Officer, Somerset and Bath Asylum, near Taunton.
1915. Graves, T. Chivers, M.B., B.S., B.Sc.Lond., F.R.C.S.Eng., Medical Superintendent, City and County Asylum, Burghill, Hereford.
1916. Gray, Cyril, L.R.C.P.&S.Edin., Gateshead Borough Asylum, Stannington, Newcastle-on-Tyne.
1909. Greene, Thomas Adrian, L.R.C.S.&P.Irel., J.P., Medical Superintendent, District Asylum, Carlow.
1886. Greenlees, T. Duncan, M.D., C.M.Edin., F.R.S.E., Rostrevor, Kirtleton Avenue, Weymouth.
1912. †Gresson, Clarence Edward, M.D., Ch.B.Aberd., Surgeon, *R.N.*, c/o Messrs. Holt & Co., 3, Whitehall Place, S.W. 1.
1915. Griffith, Alfred Hume, M.D.Edin., D.P.H.Camb., Medical Superintendent, Lingfield Epileptic School Colony, The Homestead, Lingfield, Surrey.
1915. Grigsby, Hamilton Marie, L.R.C.P.&S.Edin., 79, Victoria Road North, Southsea.
1901. Grills, Galbraith Hamilton, M.D., B.Ch.R.U.I., Dipl. Psych., Medical Superintendent, County Asylum, Chester.
1916. Grimby, Alan F., B.A., M.B., B.Ch., B.A.O., L.M.Rot.Dub. (Assistant Medical Officer, St. Edmundsbury, Lucan, Ireland); Surgeon, *R.N.*, Royal Naval Hospital, Haslar.
1900. Grove, Ernest George, M.R.C.S., L.R.C.P.Lond., Bootham Park, York.
1894. Gwynn, Charles Henry, M.D., C.M.Edin., M.R.C.S.Eng., co-Licensee, St. Mary's House, Whitchurch, Salop.
1894. Halsted, Harold Cecil, M.D.Durh., M.R.C.S., L.R.C.P.Lond., Manor Road, Selsey, Sussex.
1901. Harding, William, M.D.Edin., M.R.C.P.Lond., Medical Superintendent, Northampton County Asylum, Berry Wood, Northampton.
1899. Harmer, W. A., L.S.A., Resident Superintendent and Licensee, Redlands Private Asylum, Tonbridge, Kent.
1904. †Harper-Smith, George Hastie, B.A.Cantab., M.R.C.S., L.R.C.P.Lond., (Senior Assistant Medical Officer, Brighton County Borough Asylum, Haywards Heath), May Cottage, Loughton, Essex; Capt. *R.A.M.C. (T.)*.
1898. Harris-Liston, L., M.D.Brux., M.R.C.S., L.R.C.P.Lond., L.S.A., Middleton Hall, Middleton St. George, Co. Durham.
1905. Hart, Bernard, M.D.Lond., M.R.C.S.Eng., 29B, Wimpole Street, W. 1., and Northumberland House, Finsbury Park, N. 4.
1886. †Harvey, Bagenal Crosbie, L.R.C.P.&S.Edin., L.A.H.Dubl., Resident Medical Superintendent, District Asylum, Clonmel, Ireland.
1892. Haslett, William John H., M.R.C.S., L.R.C.P.Lond., M.P.C., Resident Medical Superintendent, Halliford House, Sunbury-on-Thames.
1891. Havelock, John G., M.D., C.M.Edin., Little Stodham, Liss, Hants.

1890. Hay, J. F. S., M.B., C.M.Aberd., Inspector-General of Asylums for New Zealand, Government Buildings, Wellington, New Zealand.
1900. Haynes, Horace E., M.R.C.S.Eng., L.S.A., J.P., Littleton Hall, Brentwood, Essex.
1895. Hearder, Frederic P., M.D., C.M.Edin., Medical Superintendent, Mid-Yorkshire Institution, Whixley, Yorks.
1911. †Heffernan, Capt. P., *I.M.S.*, B.A., M.B., B.Ch.C.U.I.
1916. †Henderson, David Kennedy, M.D.Edin., (Senior Assistant Physician, Royal Asylum, Gartnavel, Glasgow); Temp. Lieut. *R.A.M.C.*, c/o John Henderson and Sons, Solicitors, Dumfries, Scotland.
1905. Henderson, George, M.A., M.B., Ch.B.Edin., 25, Commercial Road, Peckham, S.E. 15.
1906. Herbert, Thomas, M.R.C.S., L.R.C.P.Lond., York City Asylum, Fulford, York.
1877. Hetherington, Charles E., B.A., M.B., M.Ch.Dubl., Medical Superintendent, District Asylum, Londonderry, Ireland.
1877. Hewson, R. W., L.R.C.P.&S.Edin., Medical Superintendent, Coton Hill, Stafford.
1914. Hewson, R. W. Dale, L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., Coton Hill Hospital, Stafford.
1912. Higson, William Davis, M.B., Ch.B.Liverp., D.P.H., Deputy Medical Officer, H.M. Prison, Brixton; 7, Clovelly Gardens, Upper Tulse Hill, S.W. 2.
1882. Hill, H. Gardiner, M.R.C.S.Eng., L.S.A., Pentillie, Leopold Road, Wimbledon Park, S.W. 19.
1914. †Hills, Harold William, B.S., M.B., B.Sc.Lond., M.R.C.S., L.R.C.P.Lond.; Capt. *R.A.M.C.*, Lord Derby War Hospital, Warrington.
1907. †Hine, T. Guy Macaulay, M.A., M.D., B.C.Cantab., 37, Hertford Street, Mayfair, W.; Temp. Capt. *R.A.M.C.*
1909. Hodgson, Harold West, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Severalls Asylum, Colchester.
1908. Hogg, Archibald, M.B., Ch.B.Glas., 54, High Street, Paisley, N.B.
1900. Holländer, Bernard, M.D.Freib., M.R.C.S., L.R.C.P.Lond., 57, Wimpole Street, W. 1.
1912. Holyoak, Walter L., M.D., B.S.Lond., 45, Welbeck Street, W. 1.
1903. Hopkins, Charles Leighton, B.A., M.B., B.C.Cantab., Medical Superintendent, York City Asylum, Fulford, York.
1894. Hotchkiss, Robert D., M.A.Glasg., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Reufrew District Asylum, Dykebar, Paisley N.B.
1912. Hughes, Frank Percival, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., The Grove, Pinner, Middlesex.
1900. Hughes, Percy T., M.B., C.M.Edin., D.P.H., Medical Superintendent, Worcestershire County Asylum, Barnesley Hall, Bromsgrove.
1904. Hughes, William Stanley, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Shropshire County Asylum, Bicton Heath, Shrewsbury.
1897. Hunter, David, M.A., M.B., B.C.Cantab., L.S.A., Medical Superintendent, The Coppice, Nottingham. (*Secretary for S.E. Division*, 1910-1913.)
1909. †Hunter, Douglas William, M.B., Ch.B.Glasg., Assistant Medical Officer, 10, Hallfield Road, Bradford; Capt. *R.A.M.C.*
1912. †Hunter, George Yeates Cobb, Colonel, *I.M.S.*, M.R.C.S., L.R.C.P.Lond., M.P.C., c/o Messrs. Grindlay & Co., 54, Parliament Street, S.W. 1.
1904. Hunter, Percy Douglas, M.R.C.S., L.R.C.P.Lond., Three Counties Asylum, Arlesey, Beds.
1888. Hyslop, Theo. B., M.D., C.M.Edin., M.R.C.P.E., L.R.C.S.E., F.R.S.E., M.P.C., 5, Portland Place, London, W. 1.
1915. Ingall, Frank Ernest, F.R.C.S.Eng., L.R.C.P.Lond., D.P.H., Tue Brook Villa, Liverpool.
1908. Inglis, J. P. Park, M.B., Ch.B.Edin., Assistant Medical Officer, Caterham Asylum, Caterham, Surrey.

Members of the Association.

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1906. Irwin, Peter Joseph, L.R.C.P.&S.I., Assistant Medical Officer, District Asylum, Limerick.
1914. †James, George William Blomfield, M.B., B.S.Lond., 2, Charnwood Street, Derby; *R.A.M.C.*
1908. Jeffrey, Geo. Rutherford, M.D., Ch.B.Glas., F.R.C.P.E., M.P.C., Medical Superintendent, Bootham Park, York.
1910. †Johnson, Cecil Webb, D.S.O., M.B., Ch.B.Vict. ("Cricklewood," East Sheen, S.W.); Capt. (Temp. Major) *R.A.M.C.*; 10th Middlesex Regiment, Fort William, Calcutta, India.
1893. Johnston, Gerald Herbert, L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., Brooke House, Upper Clapton, N. 5.
1905. Johnston, Thomas Leonard, L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., Medical Superintendent, Bracebridge Asylum, Lincoln.
1912. Johnstone, Emma May, L.R.C.P. & S.Edin., L.R.F.P.&S.Glas., M.P.C., Dipl. Psych., Holloway Sanatorium, Virginia Water, Surrey.
1878. Johnstone, J. Carlyle, M.D., C.M.Glas., Melrose, Roxburgh.
1903. Johnstone, Thomas, M.D., C.M.Edin., M.R.C.P.Lond., Annandale, Harrogate.
1880. †Jones, D. Johnston, M.D., C.M.Edin.; Temp. Major *R.A.M.C.*
1879. Kay, Walter S., M.D., C.M.Edin., M.R.C.S.Eng., The Grove, Starbeck, Harrogate.
1886. †Keay, John, M.D., C.M.Glasg., F.R.C.P.Edin. (Medical Superintendent, Bangour Village, Uphall, Linlithgowshire); Lt.-Col., *R.A.M.C.*, Edinburgh War Hospital, Bangour.
1909. †Keith, William Brooks, M.B., Ch.B.Aberd., M.P.C., Capt., *R.A.M.C.*, T., 81st Field Ambulance, 27th Division.
1908. Kelly, Richard, M.D., B.Ch.Dub., Assistant Medical Officer, Storthes Hall Asylum, Kirkburton, near Huddersfield.
1907. Keene, George Henry, M.D., The Asylum, Goodmayes, Ilford, Essex.
1899. Kennedy, Hugh T. J., L.R.C.P.&S.I., Assistant Medical Officer, District Asylum, Enniscorthy, Co. Wexford.
1897. Kerr, Hugh, M.A., M.D.Glasg., Medical Superintendent, Bucks County Asylum, Stone, Aylesbury, Bucks.
1902. Kerr, Neil Thomson, M.B., C.M.Ed., Medical Superintendent, Lanark District Asylum, Hartwood, Shotts, N.B.
1893. Kershaw, Herbert Warren, M.R.C.S.Eng., L.R.C.P.Lond., Dinsdale Park, near Darlington.
1897. †Kidd, Harold Andrew, M.R.C.S.Eng., L.R.C.P.Lond. (Medical Superintendent, West Sussex Asylum, Chichester); Lt.-Col. *R.A.M.C.*, Graylingwell War Hospital, Chichester.
1916. Kilgariff, Joseph O'Loughlin, A.B., M.B., B.Ch., B.A.O.Univ., Dublin, Assistant Medical Officer, County Asylum, Prestwich, Lancs.
1903. King, Frank Raymond, B.A.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Peckham House, Peckham, S.E.
1902. King-Turner, A. C., M.B., C.M.Edin., The Retreat, Fairford, Gloucestershire.
1915. Kirwan, Richard R., M.B., B.Ch. R.U.I., Assistant Medical Officer, West Riding Asylum, Menston, Leeds.
1916. Kitson, Frederick Hubert, M.B., Ch.B.Leeds, Assistant Medical Officer, West Riding Asylum, Wakefield.
1903. Kough, Edward Fitzadam, B.A., M.B., B.Ch.Dubl., Senior Assistant Medical Officer, County Asylum, Gloucester.
1898. Labey, Julius, M.R.C.S., L.R.C.P., L.S.A.Lond., Medical Superintendent, Public Asylum, Jersey.
1902. Langdon-Down, Percival L., M.A., M.B., B.C.Cantab., Dixland, Hampton Wick, Middlesex.
1896. Langdon-Down, Reginald L., M.A., M.B., B.C.Cantab., M.R.C.P.Lond., Normansfield, Hampton Wick.

1914. †Ladell, R. G. Macdonald, M.B., Ch.B.Vict., The Gables, Killinghall, Harrogate.
1909. †Laurie, James, M.B., Ch.M.Glasg. (*Medical Officer, Smithston Asylum*), (Red House, Ardgowan Street, Greenock); Capt. *R.A.M.C., T.F.*, 3rd Scottish Hospital.
1902. Laval, Evariste, M.B., C.M.Edin., The Guildhall, Westminster, S.W. 1.
1898. Lavers, Norman, M.D.Brux., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Bailbrook House, Bath.
1892. Lawless, George Robert, F.R.C.S.I., L.R.C.P.I., Medical Superintendent, District Asylum, Armagh.
1870. Lawrence, Alexander, M.A., M.D., C.M.Aberd., 26, Hough Green, Chester.
1883. Layton, Henry A., M.R.C.S.Eng., L.R.C.P.Edin., 26, Kimbolton Road, Bedford.
1915. Leech, H. Brougham, M.D., B.Ch.Dublin, Assistant Medical Officer, County Asylum, Hatton, Warwick.
1909. Leech, John Frederick Wolsley, M.D., B.Ch.Dubl. (County Asylum, Devizes, Wilts); Capt. *R.A.M.C.*
1899. Leeper, Richard R., F.R.C.S.I., L.R.C.P.I., M.P.C., Medical Superintendent, St. Patrick's Hospital, Dublin. (*Hon. Sec. to the Irish Division from 1911.*)
1883. Legge, Richard J., M.D., R.U.I., L.R.C.S.Edin., "Comeragh," Leckhampton Road, Cheltenham.
1906. †Leggett, William, B.A., M.D., B.Ch.Dubl. (Assistant Medical Officer, Royal Asylum, Sunnyside, Montrose); Temp. Lieut. *R.A.M.C.*
1916. Lewis, Edward, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., Cwirlai, Ty-Cross, Anglesey.
1914. Lindsay, David George, L.R.C.P.&S.Edin., Senior Assistant Medical Officer, Dundee District Asylum, West Green, Dundee.
1908. Littlejohn, Edward Salteine, M.R.C.S., L.R.C.P.Lond., Acting Medical Superintendent, London County Asylum, Cane Hill, Surrey.
1916. Lloyd, Brindley Richard, M.B., B.S.Lond., D.P.H.Lond., Assistant Medical Officer, Peckham House, S.E. 15.
1903. Logan, Thomas Stratford, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., D.P.H., Stone Asylum, Aylesbury, Bucks.
1898. †Lord, John R., M.B., C.M.Edin. (Medical Superintendent, Horton Asylum, Epsom); Lieut.-Colonel *R.A.M.C.*, Horton County of London War Hospital, Epsom, Surrey. (*Co-Editor of Journal since 1911; Assistant Editor of Journal, 1900-11.*)
1906. †Lowry, James Arthur, M.D., B.Ch., R.U.I., *R.A.M.C.*, Medical Superintendent, Surrey County Asylum, Brookwood.
1904. Lyall, C. H. Gibson, L.R.C.P.&S.Edin., Leicester Borough Asylum, Leicester.
1872. Lyle, Thomas, M.D., C.M.Glasg., 34, Jesmond Road, Newcastle-on-Tyne.
1906. †Macarthur, John, M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, Colney Hatch Asylum, London, N. 11); *R.A.M.C.*, Mediterranean Expeditionary Force.
1880. MacBryan, Henry C., L.R.C.P. & S. Edin., Kingsdown House, Box, Wilts.
1900. McClintock, John, L.R.C.P.&S.Edin., Resident Medical Superintendent, Grove House, All Stretton, Church Stretton, Salop.
1901. MacDonald, James H., M.B., Ch.B., F.R.F.P.&S.Glasg., Govan District Asylum, Hawkhead, Paisley, N.B.
1884. MacDonald, P. W., M.D., C.M.Aberd., Grasmere, Spa Road, Weymouth. (*First Hon. Sec. S.W. Div. 1894 to 1905.*) (*PRESIDENT, 1907-8.*)
1911. †MacDonald, Ranald, M.D., Ch.B.Edin. (London County Asylum, Bexley, Kent); Lieut. *R.A.M.C.*
1905. MacDonald, William Fraser, M.B., Ch.B.Edin., M.P.C., 96, Polworth Terrace, Edinburgh.
1905. McDougall, Alan, M.D., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Medical Director, The David Lewis Colony, Sandle Bridge, near Alderley Edge, Cheshire.

1911. McDougall, William, M.A., M.B., B.C.Cantab., M.Sc.Vict., 89, Banbury Road, Oxford.
1906. McDowall, Colin Francis Frederick, M.D., B.S.Durh., Medical Superintendent, Ticehurst House, Ticehurst, Sussex.
1870. McDowall, Thomas W., M.D.Edin., L.R.C.S.E., Medical Superintendent, Northumberland County Asylum, Morpeth. (PRESIDENT, 1897-8.)
1895. Macfarlane, Neil M., M.D., C.M.Aber., Medical Superintendent, Government Hospital, Thlotse Heights, Leribe, Basutoland, South Africa.
1902. McGregor, John, M.B., Ch.B.Edin., Senior Assistant Medical Officer, County Asylum, Bridgend, Glam.
1917. †McIver, Colin, M.R.C.S., L.R.C.P., Capt. *I.M.S.*, c/o Messrs. Grindlay & Co., 54, Parliament Street, London, S.W. 1.
1914. †Mackay, Magnus Ross, M.D., Ch.B.Edin., Capt. *R.A.M.C.*, *T.F.*, British Expeditionary Force, France.
1917. Mackay, Norman Douglas, M.D., B.Sc., D.P.H., Dall-Avon, Aberfeldy, Perthshire.
1915. McKenna, Edward Joseph, M.B., B.Ch., R.U.I., Assistant Medical Officer, Carlow District Asylum.
1911. Mackenzie, John Cosserat, M.B., Ch.B.Edin., County Mental Hospital, Burntwood, near Lichfield.
1891. Mackenzie, Henry J., M.B., C.M.Edin., M.P.C., Assistant Medical Officer, The Retreat, York.
1903. Mackenzie, Theodore Charles, M.D., Ch.B., F.R.C.P.Edin., M.P.C., Medical Superintendent, District Asylum, Inverness.
1914. Macleod, Jan R., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., 7, Mayfield Gardens, Edinburgh.
1917. McMaster, Albert Victor, B.A., M.R.C.S.Eng., "The Mount," Hills Road, Cambridge.
1904. Macnamara, Eric Danvers, M.A.Camb., M.D., B.C., F.R.C.P.Lond., 87, Harley Street, W. 1.
1914. †Macneill, Celia Mary Colquhoun, M.B., Ch.B.Edin. (Pathologist, Northfield, Prestonpans); Leith War Hospital, Seafield, Leith.
1910. †MacPhail, Hector Duncan, M.A., M.D., Ch.B.Edin. (Assistant Medical Officer, City Asylum, Gosforth, Newcastle-on-Tyne); Major *R.A.M.C.*, Northumberland War Hospital, Newcastle.
1882. Macphail, S. Rutherford, M.D., C.M.Edin., Derby Borough Asylum, Rowditch, Derby.
1896. Macpherson, Charles, M.D.Glas., L.R.C.P.&S., D.P.H.Edin., Deputy Commissioner in Lunacy, 25, Palmerston Place, Edinburgh.
1901. McRae, G. Douglas, M.D., C.M.Edin., F.R.C.P.Ed., Medical Superintendent, District Asylum, Ayr, N.B. (Assistant Editor of the *Journal* since 1916).
1902. †Macrae, Kenneth Duncan Cameron, M.B., Ch.B.Edin. (Bangour Village, Dechnonut, Liulithgowshire); Lieut. *R.A.M.C.*, M.E.F.
1894. McWilliam, Alexander, M.A., M.B., C.M.Aber., Watervul, Odiham, Winchester, Hants.
1915. Manifold, Robert Fenton, M.B., D.Ch.Dubl., Senior Assistant Medical Officer, Denbigh Asylum, North Wales.
1908. †Mapother, Edward, M.D., B.S.Lond., F.R.C.S.Eng. (Assistant Medical Officer, London County Asylum, Long-Grove, Epsom); Lieut. *R.A.M.C.*
1903. Marnan, John, B.A., M.B., B.Ch.Dubl., Medical Superintendent, County Asylum, Gloucester.
1896. †Marr, Hamilton C., M.D., C.M., F.R.F.P.&S.Glasg., M.P.C., Commissioner in Lunacy (10, Succoth Avenue, Edinburgh); (*Hon. Sec. Scottish Division*, 1907-1910.); *R.A.M.C.*
1913. †Marshall, Robert, M.B., Ch.B.Glas. (Assistant Medical Officer, Gartloch Mental Hospital, Gartcosh, N.B.); Lieut. *R.A.M.C.*, 19th General Hospital, British Expeditionary Force.
1905. Marshall, Robert Macnab, M.D., Ch.B.Glasg., M.P.C., 2, Clifton Place, Glasgow.
1908. †Martin, Henry Cooke, M.B., Ch.B.Edin., Assistant Medical Officer, Newport Borough Asylum, Caerleon; Lieut. *R.A.M.C.*

1896. †Martin, James Charles, L.R.C.S. & P.I., J.P., Assistant Medical Officer, District Asylum, Letterkenny, Donegal; Temp. Lieut. *R.A.M.C.*
1908. Martin, James Ernest, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond. Assistant Medical Officer, London County Asylum, Long-Grove Epsom.
1907. Martin, Mary Edith, L.R.C.P. & S.Edin., L.R.F.P. & S.Glas., L.S.A.Lond., M.P.C.Lond., Bailbrook House, Bath.
1914. †Martin, Samuel Edgar, M.B., B.Ch.Edin., Barrister-at-Law (Senior Assistant Medical Officer, St. Andrew's Hospital, Northampton); Lieut. *R.A.M.C.*, British Mediterranean Expeditionary Force.
1911. †Martin, William Lewis, M.A., B.Sc., M.B., C.M.Edin., D.P.H., M.P.C., Dipl. Psych. (*Certifying Physician in Lunacy, Edinburgh Parish Council*), 56, Bruntsfield Place, Edinburgh; Major *R.A.M.C.* (T.)
1911. †Mathieson, James Moir, M.B., Ch.B.Aber. (Assistant Medical Officer, Wadsley Asylum, Sheffield); Major *R.A.M.C.*, The Wharnccliffe War Hospital, Sheffield.
1904. †May, George Francis, M.D., C.M.McGill. L.S.A. (Winterton Asylum, Ferryhill, Durham); Lieut. *R.A.M.C.*
1912. Melville, William Spence, M.B., Ch.B.Glas., Woodilee Mental Hospital, Lenzie, Glasgow.
1890. Menzies, William F., M.D., B.Sc.Edin., M.R.C.P.Lond., Medical Superintendent, Stafford County Asylum, Cheddleton, near Leek.
1891. Mercier, Charles A., M.D.Lond., F.R.C.P., F.R.C.S.Eng., late Lecturer on Insanity, Westminster Hospital; Moorcroft, Parkstone, Dorset. (*Secretary Educational Committee, 1893-1905. Chairman do. from 1905-12.*) (PRESIDENT, 1908-9.)
1877. Merson, John, M.A., M.D., C.M.Aber., Medical Superintendent, Borough Asylum, Hull.
1893. Middlemass, James, M.A., M.D., C.M., B.Sc.Edin., F.R.C.P., M.P.C., Medical Superintendent, Borough Asylum, Ryhope, Sunderland.
1910. †Middlemiss, James Ernest, M.R.C.S.Eng., L.R.C.P.Lond.; 131, North Street, Leeds; Lieut. *R.A.M.C.*
1883. †Miles, George E., M.R.C.S., L.R.C.P.Lond., Lieut.-Col., *R.A.M.C.*, D Block, Royal Victoria Hospital, Netley, Hants; British Empire Club, St. James' Square, S.W. 1.
1887. Miller, Alfred, M.B., B.Ch.Dubl., Medical Superintendent, Hatton Asylum, Warwick. (*Registrar since 1902.*)
1912. Miller, Richard, M.B., B.Ch.Dubl., Bethlem Royal Hospital, London, S.E. 1.
1893. Mills, John, M.B., B.Ch., Dipl. Ment. Dis., R.U.I., Medical Superintendent, District Asylum, Ballinasloe, Ireland.
1913. Milner, Ernest Arthur, M.B., C.M.Edin., Assistant Medical Officer, Royal Albert Institution, Lancaster.
1911. Moll, Jan. Marius, Doc. in Arts and Med, Utrecht Univ., L.M.S.S.A. Lond., M.P.C., Box 2587, Johannesburg, South Africa.
1913. Molyneux, Benjamin Arthur, B.A., M.D., B.Ch.Dubl., St. Helens House, St. Helens, Hastings.
1910. †Monnington, Richard Caldicott, M.D., Ch.B., D.P.H.Edin. (Darenth Industrial Colony, Dartford, Kent); c/o Rev. T. P. Monnington, Lowick Green, Ulverston, Lancs.; Capt. *R.A.M.C.*
1915. Monrad-Krohn, G. H., M.B., B.S., M.R.C.P.Lond., M.R.C.S.Eng., Assistant Medical Officer, Rikshospitalet, Christiania.
1914. †Montgomery, Edwin, F.R.C.S.I., L.R.C.P.I. Dipl. Psych. Manch., (Prestwich Asylum, Lancs.); Lieut. *R.A.M.C.*, 77th Field Ambulance, British Expeditionary Force.
1899. Moore, Wm. D., M.D., M.Ch.R.U.I., Medical Superintendent, Holloway Sanatorium, Virginia Water, Surrey.
1914. †Morres, Frederick, M.R.C.S.Eng., L.R.C.P.Lond. (Assistant Medical Officer, Cane Hill Asylum, Coulsdon, Surrey); *R.A.M.C.*, Lord Warden Hotel, Dover.

1917. Morris, Bedlington Howel, M.B., B.S.Durh., Inspector-General of Hospitals, South Australia; Pembroke Street, College Park, St. Peter's, S. Australia.
1896. Morton, W. B., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Wonford House, Exeter.
1896. Mott, F. W., M.D., B.S., F.R.C.P.Lond., LL.D.Edin., F.R.S., 25, Nottingham Place, Marylebone, W. 1; Lieut.-Col. *R.A.M.C.*
1896. Mould, Gilbert E., M.R.C.S., L.R.C.P.Lond., The Grange, Rotherham, Yorks.
1897. Mould, Philip G., M.R.C.S.Eng., L.R.C.P.Lond., Overdale, Whitefield, Manchester.
1914. †Moyes, John Murray, M.B., Ch.B.Edin., D.P.M.Leeds, Crichton Royal Institution, Dumfries; *R.A.M.C.*
1907. Mules, Bertha Mary, M.D., B.S.Durh., Court Hall, Keaton, S. Devon.
1911. †Muncaster, Anna Lillian, M.B., B.Ch.Edin. (County Asylum, Chester); home address, 8, Craylockhail Terrace, Edinburgh; at present serving with Serbian Red Cross Society.
1917. Munro, Robert, M.B., Ch.B.Aberd., Assistant Medical Officer, Dorset County Asylum, Dorchester.
1916. Murray, Jessie M., M.B., B.S.Durham, 14, Endsleigh Street, Tavistock Square, London, W.C. 1.
1909. Myers, Charles Samuel, M.A., D.Sc., M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Great Shelford, Cambridgeshire.
1903. †Navarra, Norman, M.R.C.S., L.R.C.P.Lond. (City of London Mental Hospital, near Dartford, Kent); Temp. Capt. *R.A.M.C.*
1910. Neill, Alexander W., M.D., Ch.B.Edin., Warneford Mental Hospital, Oxford.
1903. Nelis, William F., M.D.Durh., L.R.C.P.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Newport Borough Asylum, Caerleon, Mon.
1869. Nicolson, David, C.B., M.D., C.M.Aber., M.R.C.P.Edin., F.S.A.Scot., 201, Royal Courts of Justice, Strand, W.C. 2 (PRESIDENT, 1895-6).
1888. Nolan, Michael J., L.R.C.P.&S.I., M.P.C., Medical Superintendent, District Asylum, Downpatrick.
1913. Nolan, James Noël Green, M.B., B.Ch., A.B.Dub., The Hospital, Helingly Asylum, Sussex.
1909. †Norman, Hubert James, M.B., Ch.B., D.P.H.Edin. (Assistant Medical Officer, Camberwell House Asylum, S.E. 5); Napsbury War Hospital, St. Albans; Major *R.A.M.C.*
1885. Oakshott, James A., M.D., M.Ch.R.U.I., The Green, Passage West, Co. Cork, Ireland.
1916. O'Carroll, Joseph, M.D., F.R.C.P., Physician Richmond and Whitworth Hospitals; Lord Chancellor's Medical Visitor in Lunacy; 43, Merrion Square, Dublin.
1903. O'Doherty, Patrick, B.A., M.B., B.Ch.R.U.I., District Asylum, Omagh.
1914. O'Flynn, Dominick Thomas, L.R.C.P. & S.I., Assistant Medical Officer London County Asylum, Hanwell, Middlesex.
1901. Ogilvy, David, B.A., M.D., B.Ch.Dub., Medical Superintendent, London County Asylum, Long Grove, Epsom, Surrey.
1911. †Oliver, Norman H., Major, *R.A.M.C.*, Special Hospital for Officers, Latchmere, Ham Common, Surrey.
1892. O'Mara, Francis, L.R.C.P.&S.I., District Asylum, Ennis, Ireland.
1902. Orr, David, M.D., C.M.Edin., M.P.C., Pathologist, County Asylum, Prestwich, Lancs.
1910. Orr, James H. C., M.D., Ch.B.Edin., Rosslynlee Asylum, Midlothian.
1899. Osburne, Cecil A. P., F.R.C.S., L.R.C.P.Edin., The Grove, Old Catton, Norwich.
1914. Osburne, John C., M.B., B.Ch.Dubl., Assistant Medical Officer, Lindville Cork.

1890. Oswald, Landel R., M.B., C.M.Glasg., M.P.C., Physician Superintendent, Royal Asylum, Gartnavel, Glasgow.
1916. †Overbeck-Wright, Alexander William, M.D., Ch.B., M.P.C., D.P.H., Major *I.M.S.* Superintendent, Lunatic Asylum, Agra, U. P., India (at present on military duty); Lecturer on Mental Diseases, King George's Hospital, Lucknow, and Agra Medical School, Agra. Address 12, Rubislaw Terrace, Aberdeen.
1905. †Paine, Frederick, M.D.Bru., M.R.C.S., M.R.C.P.Lond., Claybury Asylum, Woodford Bridge, Essex; *R.A.M.C.*
1898. Parker, William Arnot, M.B., C.M.Glasg., M.P.C., Medical Superintendent, Gartloch Asylum, Gartcosh, N.B.
1898. Pasmore, Edwin Stephen, M.D., M.R.C.P.Lond., Chelsham House, Chelsham, Surrey.
1916. †Patch, Charles James Lodge, L.R.C.P.&S.Edin., Assistant Medical Officer, Renfrew District Asylum, Dykebar, Paisley; Capt. *R.A.M.C.*
1899. Patrick, John, M.B., Ch.B., R.U.I., Medical Superintendent, Tyrone Asylum, Omagh, Ireland.
1907. Peachell, George Ernest, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, Dorset County Asylum, Herrison, Dorchester.
1910. †Pearn, Oscar Phillips Napier, M.R.C.S., L.R.C.P., L.S.A.Lond., (Assistant Medical Officer, London County Asylum, Horton, Epsom); Capt. *R.A.M.C.*, Lord Derby's War Hospital, Warrington, Lancs.
1915. †Pennaut, Dyfrig Huws, D.S.O., M.R.C.S., L.R.C.P.Lond., 21, Bovinton Street, Roath Park, Cardiff; Capt. *R.A.M.C.*
1913. Penny, Robert Augustus Greenwood, M.R.C.S., L.R.C.P.Lond., Devon County Asylum, Exminster.
1893. Perceval, Frank, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County Asylum, Prestwich, Manchester, Lancashire.
1911. Perdrau, Jean René, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer and Pathologist, Lambeth Infirmary, Brook Street, S.E. 11.
1911. †Petrie, Alfred Alexander Webster, M.D., B.S.Lond., Ch.B., F.R.C.S. Edin. (Assistant Medical Officer, Epileptic Colony, Epsom); Lt. *R.A.M.C.*
1878. Philipps, Sutherland Rees, M.D., C.M.Q.U.I., F.R.G.S., Bredon, Fisher Street, Paignton.
1875. Philipson, Sir George Hare, M.A., M.D.Cantab., D.C.L., LL.D., F.R.C.P. Lond., 7, Eldon Square, Newcastle-on-Tyne.
1908. Phillips, John George Porter, M.D., B.S.Lond., M.R.C.S., M.R.C.P.Lond., M.P.C., Resident Physician and Superintendent, Bethlem Royal Hospital, Lambeth, S.E. 1. (*Secretary of Educational Committee since 1912.*)
1910. †Phillips, John Robert Parry, M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, City Asylum, Bristol); Maj. *R.A.M.C.*, Beaufort War Hospital, Bristol.
1906. Phillips, Nathaniel Richard, M.D.Bru., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, County Asylum, Abergavenny, Monmouthshire.
1905. Phillips, Norman Routh, M.D.Bru., M.R.C.S., L.R.C.P.Lond., 67, Billing Road, Northampton.
1891. Pierce, Bedford, M.D., F.R.C.P.Lond., Medical Superintendent, The Retreat, York. (*Hon. Secretary N. and M. Division 1900-8.*)
1888. Pietersen, J. F. G., M.R.C.S., L.R.C.P.Lond., Ashwood House, Kingswinford, near Dudley, Stafford.
1896. Planck, Charles, M.A.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Brighton County and Borough Asylum, Haywards Heath.
1912. †Plummer, Edgar Curnow, M.R.C.S., L.R.C.P.Lond. (Medical Superintendent, Laverstock House, Salisbury); Capt. *R.A.M.C.*, British Expeditionary Force.

1889. Pope, George Stevens, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Somerset and Bath Asylum, "Westfield," near Wells, Somerset.
1913. Potts, William A., M.A.Camb., M.D.Edin.&Birm., M.R.C.S., L.R.C.P. Lond., *Medical Officer to the Birmingham Committee for the Care of the Feeble-minded*, 118, Hagley Road, Birmingham.
1876. Powell, Evan, M.R.C.S.Eng., L.S.A., Medical Superintendent, City Lunatic Asylum, Nottingham.
1910. Powell, James Farquharson, M.R.C.S., L.R.C.P., D.P.H.Lond., M.P.C., Assistant Medical Officer, The Asylum, Caterham, Surrey.
1916. Power, Patrick William, L.R.C.P., L.R.C.S., Senior Assistant Medical Officer, County Asylum, Chester.
1908. Prentice, Reginald Wickham, L.M.S.S.A.Lond., Beauworth Manor, Alresford, Hants.
1901. Pugh, Robert, M.D., Ch.B.Edin., Medical Superintendent, Brecon and Radnor Asylum, Talgarth, S. Wales.
1904. †Race, John Percy, M.R.C.S., L.R.C.P., L.S.A.Lond., Journals and notices to Winterton Asylum, Ferryhill, Durham (Wheatley Hill, Doncaster); Capt. *R.A.M.C.*
1899. Rainsford, F. E., M.D., B.A.Dubl., L.R.C.P.I., L.R.C.P.&S.E., Resident Physician, Stewart Institute, Palmerston, co. Dublin.
1894. Rambaut, Daniel F., M.A., M.D., B.Ch.Dub. (Medical Superintendent, St. Andrew's Hospital, Northampton.
1910. †Rankine, Surg. Roger Aiken, *B.N.*, M.B., B.S., M.R.C.S., L.R.C.P.Lond., M.P.C.
1889. †Raw, Nathan, M.D., B.S.Durh., L.S.Sc., F.R.C.S.Edin., M.R.C.P.Lond., M.P.C. (66, Rodney Street, Liverpool); Lt.-Col. *R.A.M.C.*, Liverpool Merchants' Hospital, A.P.O.S. 11, British Exped. Force, France.
1870. Rayner, Henry, M.D.Aberd., M.R.C.P.Edin., Upper Terrace House, Hampstead, N.W. 3. (PRESIDENT, 1884.) (*General Secretary*, 1887-89.) (*Co-Editor of Journal* 1895-1911.)
1913. †Read, Charles Stanford, M.B.Lond., M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, Fisherton House, Salisbury); Lieut. *R.A.M.C.*, Royal Victoria Hospital, Netley.
1903. Read, George F., L.R.C.S.&P.Edin., Hospital for the Insane, New Norfolk, Tasmania.
1899. Redington, John, F.R.C.S.&L.R.C.P.I., Portrane Asylum, Donabate, Co. Dublin.
1911. †Reeve, Ernest Frederick, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., (Senior Assistant Medical Officer, County Asylum, Rainhill, Lancs.); Lieut. *R.A.M.C.*
1911. †Reid, Daniel McKinley, M.D., Ch.B.Glasg. (Royal Asylum, Gartnavel, Glasgow); Lt., *R.A.M.C.*
1910. †Reid, William, M.A.St. And., M.B., Ch.B.Edin. (Senior Assistant Medical Officer, Burntwood Asylum, Lichfield); Major *R.A.M.C.*
1887. Reid, William, M.D., C.M.Aberd., Physician Superintendent, Royal Asylum, Aberdeen.
1886. Revington, George T., M.A., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, Central Criminal Asylum, Dundrum, Ireland.
1899. Rice, David, M.D.Brux., M.R.C.S., L.R.C.P.Lond., D.P.H., Medical Superintendent, City Asylum, Hillesdon, Norwich.
1897. Richard, William J., M.A., M.B., Ch.M.Glasg., Medical Officer.
1899. Richards, John, M.B., C.M.Edin., F.R.C.S.E., Medical Superintendent, Joint Counties Asylum, Carnarthen.
1911. Roberts, Henry Howard, M.D., Ch.B.Edin., D.P.H.Glasg., Ennerdale, Haddington, Scotland.
1914. †Roberts, Ernest Theophilus, M.D., C.M.Edin., D.P.H.Camb., M.P.C (129, Bath Street, Glasgow); Hawkstone, Cambuslang, Glasgow Capt. *R.A.M.C.*

1903. †Roberts, Norcliffe, M.D., B.S.Durh., (Senior Assistant Medical Officer, Horton Asylum, Epsom, Surrey); Major *R.A.M.C.*, Horton County of London War Hospital, Epsom.
1887. Robertson, Geo. M., M.D., C.M., F.R.C.P.Edin., M.P.C., Physician-Superintendent, Royal Asylum, Morningside, Edinburgh.
1908. Robertson, George Dunlop, L.R.C.S.&P.Edin., Dipl. Psych., Assistant Medical Officer, District Asylum, Hartwood, Lanark.
1916. Robertson, Jane I., M.B., Ch.B.Glasg., Gartnavel Asylum, Glasgow.
1895. Robertson, William Ford, M.D., C.M.Edin., 60, Northumberland Street, Edinburgh.
1900. Robinson, Harry A., M.D., Ch.B.Vict., 140, Edge Lane, Liverpool.
1911. †Robson, Capt. Hubert Alan Hirst, *I.M.S.*, M.R.C.S., L.R.C.P.Lond., Punjaub Asylum, India.
1914. †Rodger, Murdoch Mann, M.D., Ch.B.Glas., The Rowans, Bothwell, Scotland; Lieut. *R.A.M.C.*
1908. †Rodgers, Frederick Millar, M.D., Ch.B.Vict., D.P.H. (Senior Medical Officer, County Asylum, Winwick, Lancs.); Temp. Major, *R.A.M.C.*, Lord Derby's War Hospital, Winwick.
1908. Rolleston, Charles Frank, B.A., M.B., Ch.B.Dub., Assistant Medical Officer, County of London Manor Asylum, Epsom.
1895. †Rolleston, Lancelot W., M.B., B.S.Durh., (Medical Superintendent, Middlesex County Asylum); Lieut.Col. *R.A.M.C.*, Napsbury War Hospital, Napsbury, near St. Albans.
1888. Ross, Chisholm, M.D.Syd., M.B., C.M.Edin., 151, Macquarie Street, Sydney, New South Wales.
1913. Ross, Derind Maxwell, M.B., Ch.B.Edin., Morningside Asylum, Edinburgh.
1910. †Ross, Donald, M.B., Ch.B.Edin., Argyll and Bute Asylum, Lochgilphead; Temp. Lieut. *R.A.M.C.*
1905. Ross, Sheila Margaret, M.D., Ch.B.Edin., 83A, Friar Gate, Derby.
1899. Rotherham, Arthur, M.A., M.B., B.C.Cantab., Commissioner under Ment. Defec. Act, Board of Control, 66, Victoria Street, Westminster, S.W. 1.
1906. Rowan, Marriott Logan, B.A., M.D.R.U.I., Medical Superintendent, Derby County Asylum, Mickleover.
1883. Rowland, E. D., M.B., C.M.Edin., *I.S.O.* (attached *R.A.M.C.*), 71, Main Street, George Town, Demerara, British Guiana.
1902. †Rows, Richard Gundry, M.D.Lond., M.R.C.S., L.R.C.P.Lond. (Pathologist, County Asylum, Lancaster), Major *R.A.M.C.*, British Red Cross Military Hospital, Maghull, Liverpool.
1877. Russell, Arthur P., M.B., C.M., M.R.C.P.Edin., The Lawn, Lincoln.
1912. †Russell, John Ivison, M.B., Ch.B.Glasg. (Jeanfield, 18, Woodend Drive, Jordan Hill, Glasgow; Temp. Capt. *R.A.M.C.*
1915. Russell, William, M.B., Ch.B.Edin., Dip.Psych.Edin., D.T.M.Edin., Assistant Physician, Pretoria Mental Hospital, S. Africa.
1912. †Rutherford, Cecil, M.B., B.Ch.Dubl. (Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey); Temp. Capt. *R.A.M.C.*, No. 16 Standard Hospital, Mediterranean Expeditionary Force.
1907. Rutherford, Henry Richard Charles, F.R.C.S.I., L.R.C.P.I., D.P.H., St. Patrick's Hospital, James's St., Dublin.
1896. Rutherford, James Mair, M.B., C.M., F.R.C.P.Edin., M.P.C., Brislington House, Bristol.
1913. †Ryan, Ernest Noel, B.A., M.D., B.Ch.Dub., *R.A.M.C.*, 6th London Field Ambulance (T.).
1902. Sall, Ernest Frederick, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Borough Asylum, Canterbury.
1908. Samuels, William Frederick, L.M.&L.S.Dubl., Medical Superintendent Central Asylum, Tangong, Rambutan, Perak, Federated Malay States.
1894. Sankey, Edward H. O., M.A., M.B., B.C.Cantab., Resident Medical Licensee, Boreatton Park Licensed House, Baschurch, Salop.
- Sankey, R. H. Heurtley, M.R.C.S.Eng., 3, Marston Ferry Road, Oxford.

1873. **Savage**, Sir Geo. H., M.D., F.R.C.P.Lond., 26, Devonshire Place, W. 1.
(*Late Editor of Journal.*) (PRESIDENT, 1886.)
1906. †**Scanlan**, John J., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., D.P.H. (1 Castle Court, Cornhill, E.C.); Capt. *R.A.M.C.*, 5th London Field Ambulance, 47th (London) Division, British Expeditionary Force.
1896. **Scott**, James, M.B., C.M.Edin., 98, Baron's Court Road, West Kensington, W. 14.
1915. **Scott**, James McAlpine, M.D., Ch.B.Glasg., Junior Assistant Medical Officer, Stirling District Asylum, Larbert.
1889. **Scowcroft**, Walter, M.R.C.S., L.R.C.P.I., Medical Superintendent, Royal Lunatic Hospital, Cheadle, near Manchester.
1911. **Scroope**, Geoffrey, M.B., B.Ch.Dub., Assistant Medical Officer, Central Asylum, Dundrum.
1880. **Seccombe**, George S., M.R.C.S., L.R.C.P.Lond., c/o Messrs. H. S. King and Co., 65, Cornhill, E.C. 3.
1912. **Sergeant**, John Noel, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Newlands House, Tooting Bec Common, S.W. 17.
(*Secretary South-Eastern Division from 1913.*)
1882. **Seward**, William J., M.B.Lond., M.R.C.S.Eng., 15, Chandos Avenue, Oakleigh Park, N. 11.
1913. †**Shand**, George Ernest, M.D., Ch.B.Aberdeen; (Senior Assistant Medical Officer, City Mental Hospital, Winson Green, Birmingham); Journals to Capt. *R.A.M.C.*, No. 6 Clearing Hospital, British Expeditionary Force.
1901. †**Shaw**, B. Henry, M.B., B.Ch.R.U.I. (Assistant Medical Officer, County Asylum, Stafford); *R.A.M.C.*
1909. †**Shaw**, William Samuel J., M.B., B.Ch.R.U.I., Major *I.M.S.*, Superintendent, North Veravola, Poona, India.
1905. **Shaw**, Charles John, M.D., Ch.B., F.R.C.P.E., Medical Superintendent, Royal Asylum, Montrose.
1915. †**Shaw**, Hugh Kirkland, M.B., Ch.B.Edin. (Assistant Medical Officer, Stirling District Asylum, Larbert); Surgeon *R.N.*
1917. **Shaw**, John Custance, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, West Ham Borough Asylum, Goodmayes, Essex.
1904. **Shaw**, Patrick, L.R.C.P.&S.Edin., Senior Medical Officer (Hospital for the Insane, Kew, Victoria, Australia); "*Lingerwood*," Wills Street, Kew, Victoria, Australia. *On active service.*
1909. **Shepherd**, George Ferguson, F.R.C.S., L.R.C.P.Irel., D.P.H., 9, Ogle Terrace, South Shields.
1900. **Shera**, John E. P., M.D.Brux., L.R.C.P.&S.Irel., Somerset County Asylum, Wells, Somerset.
1912. **Sheridan**, Gerald Brinsley, M.B., B.Ch.R.U.I., Assistant Medical Officer, Portrane Asylum, Donabate, Co. Dublin.
1914. **Sherlock**, Edward Burball, M.D., B.Sc., D.P.H.Lond., Medical Superintendent, Darenth Industrial Colony, Dartford.
1914. †**Shield**, Hubert, M.B., B.S.Durh. (Assistant Medical Officer, Gateshead Borough Asylum, Stannington, Newcastle-on-Tyne); Capt., *R.A.M.C.* (T.), 1st Nottingham Field Ambulance, British Expeditionary Force, France.
1877. **Shuttleworth**, George E., B.A.Lond., M.D.Heidelb., M.R.C.S. and L.S.A Lond., 25, New Cavendish Street; 8, Lancaster Place, Hampstead, N.W. 1.
1901. †**Simpson**, Alexander, M.A., M.D., C.M.Aber. (Medical Superintendent, County Asylum, Winwick, Newton-le-Willows, Lancashire); Lt.-Col., *R.A.M.C.*, Lord Derby War Hospital, Warrington.
1905. **Simpson**, Edward Swan, M.D., Ch.B.Edin., East Riding Asylum, Beverley, Yorks.
1888. **Sinclair**, Eric, M.D., C.M.Glasg., Inspector-General of Insane, Richmond Terrace, Demain, Sydney, N.S.W.
1891. **Skeen**, James Humphry, M.B., Ch.M.Aber., M.P.C., Medical Superintendent, Fife and Kinross District Asylum, Cupar, N.B.
1900. **Skinner**, Ernest W., M.D., C.M.Edin., J.P., Mountfield, Rye, Sussex.

1914. Slaney, Chas. Newnham, M.R.C.S., L.R.C.P.Lond., The Elms, Parkhurst, I.W.
1901. Slater, George N. O., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Essex County Asylum, Brentwood.
1914. Smith, Charles Kelman, M.B., Ch.B.Aberd., Assistant Medical Officer, Parkside Asylum, Macclesfield.
1910. †Smith, Gayton Warwick, M.D.Lond., B.S.Durh., D.P.H.Cantab., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Middlesex County Asylum, Tooting, S.W. 17; Capt. *R.A.M.C.*
1905. Smith, George William, M.B., Ch.B.Edin. (Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey).
1907. Smith, Henry Watson, M.D., Ch.B.Aberd., Medical Superintendent, Lebauon Hospital for the Insane, Asfurujeh, near Beyrout, Syria.
1899. Smith, John G., M.D., C.M.Edin., Herts County Asylum, Hill End, St. Albans, Herts.
1885. Smith, R. Percy, M.D., B.S., F.R.C.P.Lond., M.P.C., 36, Queen Anne Street, Cavendish Square, W. 1. (*General Secretary*, 1896-7. *Chairman Educational Committee*, 1899-1903.) (*PRESIDENT*, 1904-5.)
1913. Smith, Thomas Cyril, M.B., B.Ch.Edin., County Asylum, Gloucester.
1911. Smith, Thomas Waddelow, F.R.C.S., L.R.C.P.Lond., M.P.C., Assistant Medical Officer, City Asylum, Mapperley Hill, Nottingham.
1884. Smith, W. Beattie, F.R.C.S.Edin., L.R.C.P.Edin., 4, Collins Street, Melbourne, Victoria.
1914. Smith, Walter H., B.A., M.D., B.Ch.Dub., Senior Assistant Medical Officer, County Asylum, Shrewsbury.
1899. Smyth, Walter S., M.B., B.Ch.R.U.I., Assistant Medical Officer, County Asylum, Antrim.
1913. Somerville, Henry, B.Sc., M.R.C.S., L.R.C.P.Lond., F.C.S., Harrold, Sharnbrook, Bedfordshire.
1885. Soutar, James Greig, M.B., C.M.Edin., M.P.C., Medical Superintendent, Barnwood House, Gloucester. (*PRESIDENT*, 1912-13.)
1906. Spark, Percy Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, London County Asylum, Banstead, Surrey.
1875. Spence, J. Beveridge, M.D., M.C.Q.U.I., Medical Superintendent, Burntwood Asylum, near Lichfield. (*First Registrar*, 1892-1899; *Chairman Parliamentary Committee*, 1910-12.) (*PRESIDENT*, 1899-1900.)
1913. Spensley, Frank Oswald, M.R.C.S., L.R.C.P.Lond., Senior Medical Officer, Darenth Asylum, Dartford, Kent.
1891. †Stansfield, T. E. K., M.B., C.M.Edin., Medical Superintendent, London County Asylum, Bexley, Kent; Hon. Major, *R.A.M.C.*
1901. Starkey, William, M.B., B.Ch.R.U.I., Medical Superintendent, Borough Asylum, Blackadon, Ivybridge, S. Devon.
1907. †Steele, Patrick, M.D., Ch.B., M.R.C.P.Edin. (Assistant Medical Officer, District Asylum, Melrose; Lt. *R.A.M.C.*
1898. Steen, Robert H., M.D.Lond., M.R.C.P.Lond., Medical Superintendent, City of London Mental Hospital, Stone, Dartford. (*Hon. Sec. S.E. Division*, 1905-10; *Acting Hon. Gen. Sec.* since 1915.)
1914. Stephens, Harold Freize, M.R.C.S.Lond., L.R.C.P.Eng., 9, Belmont Avenue, Palmer's Green, Middlesex.
1914. †Stevenson, George Henderson, M.B., Ch.B.Edin., D.P.H.Lond. (Joyce Green Hospital, Dartford, Kent); *R.A.M.C.*
1912. †Stevenson, William Edward, M.B., B.S.Durh.; Lieut. 19th Battalion Royal Welsh Fusiliers, Winnell Down Camp, Winchester.
1909. †Steward, Sidney John, M.D., D.S.O., B.C.Cantab., M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, Langton Lodge, Farncombe, Surrey); Capt., *R.A.M.C.*, *T.E.*
1915. Stewart, A. H. L., M.R.C.S., 72, Wimpole Street, W. 1.
1868. Stewart, James, B.A.Belf., F.R.C.P.Ed., L.R.C.S.I., Junior Constitutional Club, Piccadilly, W. 1.

1913. †Stewart, Ronald, M.B., Ch.B.Glasg. (Gartlock Asylum, Gartcosh, Glasgow); Capt. *R.A.M.C.*, No. 38 Hospital, Mediterranean Expeditionary Force.
1887. Stewart, Rothsay C., M.R.C.S.Eng., L.S.A.Lond., Medical Superintendent, County Asylum, Narborough, near Leicester.
1914. †Stewart, Roy M., M.B., Ch.B.Edin. (Assistant Medical Officer, County Asylum, Prestwich); Capt. *R.A.M.C.*, Mediterranean Expeditionary Force, c/o G.P.O.
1905. Stilwell, Henry Francis, L.R.C.P.&S.E., Hayes Park, Hayes, Middlesex.
1899. Stilwell, Reginald J., M.R.C.S., L.R.C.P.Lond., Moorcroft House, Hillingdon, Middlesex.
1897. Stoddart, William Henry Butter, M.D., B.S., F.R.C.P.Lond., M.R.C.S.Eng., M.P.C., Harcourt House, Cavendish Square, W. 1. (*Hon. Sec. Educational Committee, 1908-1912.*)
1909. †Stokes, Frederick Ernest, M.B., Ch.B.Glasg., D.P.H.Cantab. (Assistant Medical Officer, Borough Asylum, Portsmouth); Major, *R.A.M.C.* (T.), 2/3 Wessex Field Ambulance.
1905. Strathearn, John, M.D., Ch.B.Glasg., F.R.C.S.E., 23, Magdalen Yard Road, Dundee.
1903. Stratton, Percy Haughton, M.R.C.S., L.R.C.P.Lond., 10, Hanover Square, W. 1.
1885. Street, C. T., M.R.C.S., L.R.C.P.Lond., Haydock Lodge, Ashton, Newton-le-Willows, Lancashire.
1909. †Stuart, Frederick J., M.R.C.S., L.R.C.P.Lond. (Senior Assistant Medical Officer, Northampton County Asylum, Berrywood); Major *R.A.M.C.*, War Hospital, Dunston, Northampton.
1900. Sturrock, James Prain, M.A.St.And., M.D., C.M.Edin., 25, Palmerston Place, Edinburgh.
1886. Sufferu, Alex. C., M.D., M.Ch.R.U.I. (Medical Superintendent, Rubery Hill Asylum, near Bromsgrove, Worcestershire); Lt.-Col. *R.A.M.C.*, 1st Birmingham War Hospital, Rubery Hill, Worcestershire.
1894. Sullivan, William C., M.D., B.Ch.R.U.I., Rampton Criminal Lunatic Asylum, Retford, Notts.
1910. †Sutherland, Joseph Roderick, M.B., Ch.B.Glasg., M.R.C.S., L.R.C.P.Lond., D.P.H., County Sanatorium, Stonehouse, Lanarkshire.
1908. Swift, Eric W. D., M.B.Lond., Medical Superintendent, Government Asylum, Bloemfontein.
1908. Tattersall, John, M.D.Lond., M.R.C.S., M.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Hanwell, W. 7.
1910. Taylor, Arthur Loudoun, B.Sc., M.B., Ch.B., M.R.C.P.Edin., 30, Hartington Place, Edinburgh.
1897. Taylor, Frederic Ryott Percival, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, East Sussex Asylum, Hellingly.
1908. Thomas, Joseph D., B.A., M.B., B.C.Cantab., Northwoods House, Winterbourne, Bristol.
1911. †Thomas, William Rees, M.D., B.S.Lond., M.R.C.S., M.R.C.P.Lond., M.P.C. (Mossdale, Maghull, near Liverpool); Capt. *R.A.M.C.* British Red Cross War Hospital, Maghull, near Liverpool.
1890. †Thomson, David G., M.D., C.M.Edin. (Medical Superintendent, County Asylum, Thorpe, Norfolk); Lieut.-Col. *R.A.M.C.*, Norfolk War Hospital, Thorpe, Norwich. (*PRESIDENT, 1914-15.*)
1903. Thomson, Herbert Campbell, M.D., F.R.C.P.Lond., Assist. Physician Middlesex Hospital, 34, Queen Anne Street, W. 1.
1905. †Tidbury, Robert, M.D., M.Ch. R.U.I. (Heathlands, Foxhall Road, Ipswich); Lieut. *R.A.M.C.*
1901. Tighe, John V. G. B., M.B., B.Ch.R.U.I., Medical Superintendent, Gateshead Mental Hospital, Stannington, Northumberland.
1914. †Tisdall, C. J., M.B., Ch.B. (Crichton Royal Institution, Dumfries); *R.A.M.C.*
1903. Topham, J. Arthur, B.A.Cantab., M.R.C.S., L.R.C.P.Lond., County Asylum, Chartham, Kent.

1896. Townsend, Arthur A. D., M.D., B.Ch.Birm., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Hospital for Insane, Barnwood House, Gloucester.
1904. Treadwell, Oliver Ferreira Naylor, M.R.C.S.Eng., L.S.A.Lond., 102, Belgrave Road, S.W. 1.
1903. Tredgold, Alfred F., M.R.C.S., L.R.C.P.Lond. (6, Dapdune Crescent, Guildford, Surrey).
1908. Tuach-MacKenzie, William, M.D., Ch.B.Aberd., Medical Superintendent, Royal and District Asylums, Dundee.
1881. Tuke, Charles Molesworth, M.R.C.S.Eng., Chiswick House, Chiswick.
1888. Tuke, John Batty, M.D., C.M., F.R.C.P.Edin., Resident Physician, New Saughton Hall, Polton, Midlothian.
1915. Tulloch, William John, M.D.St. Andrews, Director Western Asylums Research Institute, 10, Claythorn Road, Glasgow.
1906. †Turnbull, Peter Mortimer, M.B., B.Ch.Aberd., Tooting Bec Asylum, Tooting, S.W. 17; Temp. Lieut. *R.A.M.C.*
1909. Turnbull, Robert Cyril, M.D.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Essex County Asylum, Colchester.
1889. Turner, Alfred, M.D., C.M.Edin., Plympton House, Plympton, S. Devon.
1906. Turner, Frank Douglas, M.B.Lond., M.R.C.S., L.R.C.P.Lond., Medical Officer, Royal Eastern Counties Institution, Colchester.
1890. Turner, John, M.B., C.M.Aberd., Medical Superintendent, Essex County Asylum, Brentwood.
1917. Vevers, Oswald Henry, M.R.C.S., L.R.C.P.Lond., Acting Medical Superintendent, Laverstock House, Salisbury.
1904. Vincent, George A., M.B., B.Ch.Edin., Assistant Medical Superintendent, St. Ann's Asylum, Port of Spain, Trinidad, B.W.I.
1894. †Vincent, William James N., M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond. (Medical Superintendent, Wadsley Asylum, near Sheffield); Lt.-Col. *R.A.M.C.*, Wharnccliffe War Hospital, Sheffield.
1914. Vining, Charles Wilfred, M.D., B.S.Lond., M.R.C.P.Lond., D.P.H., M.P.C., Assistant Physician, Leeds General Infirmary, 40, Park Square, Leeds.
1913. †Walford, Harold R. S., M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, Kent County Asylum, Barwing Heath, Maidstone); Lieut. *R.A.M.C.*
1914. Walker, Robert Clive, M.B., Ch.B.Edin., West Riding Asylum, Menston, near Leeds.
1908. Wallace, John Andrew Leslie, M.D., Ch.B.Edin., M.P.C.
1912. Wallace, Vivian, L.R.C.P. & S.I., Assistant Medical Officer, Mullingar District Asylum, Mullingar.
1889. Warnock, John, C.M.G., M.D., C.M., B.Sc.Edin., Medical Superintendent, Abbasiyeh Asylum, nr. Cairo, Egypt.
1895. Waterston, Jane Elizabeth, M.D.Bruce, L.R.C.P.I., L.R.C.S.Edin., M.P.C., 85, Parliament Street, Box 78, Cape Town, South Africa.
1902. Watson, Frederick, M.B., C.M.Edin., Elm Lodge, Clay Hill, Enfield.
1891. Watson, George A., M.B., C.M.Edin., M.P.C., Lyons House, Rainhill, Liverpool.
1908. Watson, H. Ferguson, M.D., Ch.B.Glas., L.R.C.P.&S.E., L.R.F.P.&S.Glas., D.P.H., Northcote, Edinburgh Road, Perth.
1911. †Webber, Leonard Mortis, M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer, Netherne, Merstham, Surrey); Temp. Lieut. *R.A.M.C.*
1911. †White, Edward Barton C., M.R.C.S., L.R.C.P.Lond. (Senior Assistant Medical Officer, Cardiff City Mental Hospital, Whitchurch); Major, *R.A.M.C.*, Welsh Metropolitan War Hospital, Whitchurch.
1884. †White, Ernest William, M.B.Lond., M.R.C.P.Lond. (Betley House, nr. Shrewsbury). (*Hon. Sec. South-Eastern Division, 1897-1900.*) (*Chairman Parliamentary Committee, 1904-7.*) (*PRESIDENT 1908-4.*); Temp. Hon. Lieut.-Col. *R.A.M.C.*

1905. †Whittington, Richard, M.A., M.D.Oxon., M.R.C.S., L.R.C.P.Lond., (Downford, Montpelier Road, Brighton); Major, *R.A.M.C., T.F.*, 2nd East General Hospital, Brighton.
1889. Whitwell, James Richard, M.B., C.M.Edin., Medical Superintendent, Suffolk County Asylum, Melton Woodbridge.
1903. Wigan, Charles Arthur, M.D.Durh., M.R.C.S.Eng., L.S.A.Lond., Deepdene, Portishead, Somerset.
1883. Wigglesworth, Joseph, M.D., F.R.C.P.Lond., Springfield House, Winscombe, Somerset. (PRESIDENT, 1902-3.)
1913. †Wilkins, William Douglas, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond. (County Mental Hospital, Cheddleton, Leek, Staff.); Capt. *R.A.M.C.*
1900. †Wilkinson, H. B., M.R.C.S., L.R.C.P.Lond. (Assistant Medical Officer Plymouth Borough Asylum, Blackadon, Ivybridge, South Devon); Lieut. *R.A.M.C.*
1887. Will, John Kennedy, M.A., M.D., C.M.Aberd., M.P.C., Bethnal House, Cambridge Road, N.E.1.
1914. Williams, Charles, L.R.C.P.&S.Edin., L.S.A.Lond., Assistant Medical Officer, The Warneford, Oxford.
1907. †Williams, Charles E. C., M.A., M.D., B.Ch.Dubl.; Greystones, Carnford Cliffs, Bournemouth; Capt. *R.A.M.C.*, No. 12 General Hospital, British Expeditionary Force, France.
1905. Williams, David John, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Asylum, Kingston, Jamaica.
1915. †Williams, Gwilym Ambrose, L.R.C.P.Lond., M.R.C.S.Eng. (Pathologist and Assistant Medical Officer. East Sussex County Asylum, Hellingly); *R.A.M.C.*, 27th General Hospital, Mediterranean Expeditionary Force.
1916. Wilson, Marguerite, M.B., Ch.B.Glasg., 61, Selly Park Road, Selly Park, Birmingham.
1912. Wilson, Samuel Alexander Kinnier, M.A., M.D., B.Sc.Edin., F.R.C.P.Lond., Registrar, National Hospital, Queen's Square, 14, Harley Street, W. 1.
1897. Winder, W. H., M.R.C.S., L.R.C.P.Lond., D.P.H.Cantab., Deputy Medical Officer, H.M. Borstal Institution, Borstal, Kent.
1875. Winslow, Henry Forbes, M.D.Lond., M.R.C.P.Lond., M.R.C.S.Eng., 164, Marine Parade, Brighton.
1899. Wolseley-Lewis, Herbert, M.D.Bruce, F.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Kent County Asylum, Barming Heath, Maidstone. (*Secretary Parliamentary Committee, 1907-12. Chairman since 1912.*)
1869. Wood, T. Outtersou, M.D.Durh., M.R.C.P.Lond., F.R.C.P., F.R.C.S. Edin., 7, Abbey Crescent, Torquay. (PRESIDENT, 1905-6.)
1912. †Woods, James Cowan, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., (10, Palace Green, Kensington, W. 8); Temp. Major *R.A.M.C.*
1885. †Woods, J. F., M.D.Durh., M.R.C.S.Eng. (7, Harley Street, Cavendish Square, W.); Capt. *R.A.M.C.*
1912. Wootton, John Charles, M.R.C.S.Eng., L.R.C.P.Lond., Haydock Lodge, Newton-le-Willows, Lancs.
1900. †Worth, Reginald, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond. (Medical Superintendent, Middlesex Asylum, Tooting, S.W.17); Maj. *R.A.M.C.*
1917. †Wright, Maurice Beresford, M.D., C.M. (118, Harley Street, London, W. 1); Major *R.A.M.C.*, 10, Palace Green, Kensington, W. 8.
1862. Yellowlees, David, LL.D.Glasg., M.D.Edin., F.R.F.P.&S.Glasg., 6, Albert Gate, Dowan Hill, Glasgow. (PRESIDENT, 1890.)
1914. †Yellowlees, Henry, M.B., Ch.B.Glasg., 6, Albert Gate Dowan Hill, Glasgow; Lt. *R.A.M.C.*, 26th British General Hospital, British Exped. Force.
1910. Younger, Edward George, M.D.Bruce, M.R.C.P., M.R.C.S., L.S.A.Lond., D.P.H., Physician to the Finsbury Dispensary, 2, Mecklenburgh Square, W.C. 1.

XXX

ORDINARY MEMBERS	...	...	...	...	627
HONORARY MEMBERS	33
CORRESPONDING MEMBERS	18
Total	678

† Serving with H.M. Forces.

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OBITUARY.

Honorary Members.

1898. Magnan, V., M.D., Asile de Ste. Anne, Paris.
 1917. Urquhart, Alexander Reid, M.D.Aber., LL.D.Aber., F.R.C.P.Edin., late Physician Superintendent, James Murray's Royal Asylum, Perth.

Members.

1905. Alexander, Edward Henry, M.B., C.M.Edin., M.R.C.S., L.R.C.P.Lond, M.P.C., Physician Superintendent, Ashbourne Hall Asylum, Dunedin, New Zealand.
 1908. †Blandy, Gurth Swinnerton, M.D., Ch.B.Edin., M.C. (Assistant Medical Officer, Middlesex County Asylum, Napsbury, Herts); Capt. R.A.M.C. (T.) (*killed in action*).
 1892. Bullen, Frederick St. John, M.R.C.S.Eng., L.S.A.Lond., 3, Richmond Park Road, Clifton, Bristol.
 1889. Calcott, James T., M.D., B.S.Durh., M.R.C.S.Eng., Medical Superintendent, Borough Asylum, Newcastle-on-Tyne.
 1890. Ellis, William Gilmore, M.D.Brux., M.R.C.S.Eng., L.S.A.Lond., J.P., Principal Civil Medical Officer, Singapore, Straits Settlements.
 1884. Ewart, C. T., M.D., C.M.Aberd., Medical Superintendent, Claybury Asylum, Woodford Bridge, Essex.
 1897. Fielding, James, M.D., Vict. Univ., Canada, M.R.C.S.Eng., L.R.C.P.Edin., 18, The Crescent, Norwich.
 1887. Graham, William, M.D.R.U.I., L.R.C.S.Edin., Medical Superintendent, District Lunatic Asylum, Belfast.
 1882. †Hyslop, James, Col. D.S.O., M.B., C.M.Edin., Medical Superintendent The Huts, Pietermaritzburg, Natal.
 1898. Macnaughton, George W. F., M.D., F.R.C.S.Edin., M.R.C.P.Lond., M.P.C., 33, Lower Belgrave Street, Eaton Square, London, S.W. 1.
 1871. Mickle, William Julius, M.D., F.R.C.P.Lond., Ottawa, Canada. (PRESIDENT, 1896-7.)
 1893. Murdoch, James William Aitken, M.B., C.M.Glasg., Medical Superintendent, Berks County Asylum, Wallingford.
 1873. Newington, H. Hayes, F.R.C.P.Edin., M.R.C.S.Eng., The Gables, Ticehurst, Sussex. (*Chairman Parliamentary Committee, 1896-1904.*) (PRESIDENT, 1889.) (*Treasurer since 1894.*)
 1892. Patterson, Arthur Edward, M.D., C.M.Aber., M.P.C., Senior Assistant Medical Officer, City of London Asylum, Dartford.
 1893. Rawes, William, M.D.Durh., F.R.C.S.Eng., Medical Superintendent, St. Luke's Hospital, Old Street, London, E.C.
 1901. Smyth, Robt. B., M.A., M.B., Ch.B.Dubl., Medical Superintendent, County Asylum, Gloucester.
 1885. Tuke, T. Seymour, M.A., M.B., B.Ch.Oxon., M.R.C.S.Eng., Chiswick House, Chiswick, W.
 1885. Watson, William Riddell, L.R.C.S. & P.Edin., 6, Queen's Mansions, Brook Green, London, W.

List of those who have passed the Examination for the Certificate of Efficiency in Psychological Medicine, entitling them to append M.P.C. (Med.-Psych. Certif.) to their names.

- | | |
|---------------------------------|---------------------------|
| Adams, J. Barfield. | Clayton, Frank Herbert A. |
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| Barker, Alfred James Glanville. | Cowper, John. |
| Bashford, Ernest Francis. | Cox, Walter H. |
| Bazalgette, S. | 8 Craig, M. |
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| Blachford, J. Vincent. | Cruickshank, George. |
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| Black, Victor. | Dalgetty, Arthur B. |
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| Blandford, Henry E. | Davidson, William. |
| 7 Bond, C. Hubert. | 6 Dawson, W. R. |
| Bond, R. St. G. S. | De Silva, W. H. |
| Howlan, Marcus M. | 11 Devine, H. |
| Boyd, James Paton. | Distin, Howard. |
| 13 Boyd, William | Dixon, J. F. |
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- 1 To whom the Gaskell Prize (1887) was awarded.
- 2 To whom the Gaskell Prize (1889) was awarded.
- 3 To whom the Gaskell Prize (1890) was awarded.
- 4 To whom the Gaskell Prize (1892) was awarded.
- 5 To whom the Gaskell Prize (1895) was awarded.
- 6 To whom the Gaskell Prize (1896) was awarded.
- 7 To whom the Gaskell Prize (1897) was awarded.
- 8 To whom the Gaskell Prize (1900) was awarded.
- 9 To whom the Gaskell Prize (1901) was awarded.
- 10 To whom the Gaskell Prize (1906) was awarded.
- 11 To whom the Gaskell Prize (1909) was awarded.
- 12 To whom the Gaskell Prize (1911) was awarded.
- 13 To whom the Gaskell Prize (1912) was awarded.
- 14 To whom the Gaskell Prize (1913) was awarded.
- 15 To whom the Gaskell Prize (1917) was awarded.



ALEXANDER REID URQUHART, LL.D., M.D. Aberd., F.R.C.P. Edin.
Obiit July 31st, 1917. President, 1898. Co-Editor of Journal 1894-1910.

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Part I.—Original Articles.

Aphasia in Relation to Mental Disease. Presidential Address by
R. PERCY SMITH, M.D., in the Section of Neurology of the Royal
Society of Medicine, at Meeting held on October 25th, 1917.

My first duty is to express my thanks to the members of the Section for having done me the honour to elect me as its President for the ensuing year, an honour which I felt bound to accept, although it involved the burden of a Presidential Address, in addition to one a year ago to the Section of Psychiatry, of which I am still President. Perhaps the accident that I was for some years the editor of *Brain*, which was at that time the journal of the Neurological Society, in succession to Dr. de Watteville, induced the Section to place me in this chair, to hold which, however, I feel myself unworthy in presence of and in succession to so many distinguished neurologists.

To one whose work has lain for so many years in the domain of psychiatry the choice of a subject for a Presidential Address to this Section has seemed somewhat difficult, but it appeared to me that my best course was to search through my case-books for cases which might be of interest both to the neurologist and the alienist and lie in the borderland between the practices of the two, and as to which either of them may be consulted by the general practitioner. In this way many cases of disease of the nervous system where there has been more or less pronounced mental disorder have come before me.

It has seemed to me that those cases in which there has been aphasia more or less pronounced whether with or without hemiplegia (apart from cases of general paralysis where it has been an occasional symptom), and in which I have been consulted as to the patient's mental condition would be the most likely to be of interest to the Section.

LXIV.

I

The subject of aphasia has, of course, a voluminous literature, both from the side of neurology and of psychiatry, and with regard to this I think we owe an eternal debt of gratitude to Dr. Henry Head, the present editor of *Brain*, and our senior Vice-President, for having in vol. xxxviii of that journal reprinted many of the important papers of our great master, Hughlings Jackson, and so prevented them from passing into obscurity, and for having in his paper, "Hughlings Jackson on Aphasia and Kindred Affections of Speech," given so admirable a summary of the views and conclusions of that great English neurologist. I may also mention the valuable reviews and summaries given by James Collier (*Brain*, 1908, xxxi, p. 523), and by S. A. K. Wilson (*Review of Neurology and Psychiatry*, 1909, vii, p. 151) on the subject.

As recently as 1915 Head writes: "Speech is a function of mental activity and however much that mental activity may ultimately be linked up with the integrity of some portion of the brain substance the problem is primarily a psychological one," and again, "no one but Hughlings Jackson has recognised that all the phenomena are primarily psychical and only in the second place susceptible of physiological or anatomical explanation" (*loc. cit.*, p. 4).

Therefore, no apology is needed for examining those cases of aphasia which come under the notice of the alienist. In any particular case it is important to ascertain whether there has been mental disorder of any kind preceding more definite affection of the speech mechanism, as well as to see in what way cases beginning with aphasia are associated with mental disorder. There frequently arises also in any of these cases the question of business or testamentary capacity.

Although during my tenure of office at Bethlem Hospital a few cases of aphasia associated with certifiable insanity were admitted, in some of which an autopsy was obtainable, the larger number of cases which I have met with in consulting practice have only been seen clinically, and there has been no opportunity of ascertaining how far the affection of speech corresponded with any particular pathological condition of the brain. With regard to this, however, I may again quote Head's remarks in reference to Hughlings Jackson's views: "But no one has assimilated his views on defect of speech and applied them to a series of actual cases of this condition. We failed to appreciate how much closer these conceptions would lead us to the phenomena of aphasia than the glib generalities founded on the anatomical facts of cortical localisation." And again, "Neurology has become frozen stiffly in the grip of pseudo-metaphorical classifications which neither explain the condition nor correspond to the clinical fact" (*loc. cit.*, p. 3).

Hughlings Jackson has said, "We shall do no harm to clinical medicine, if we simply record all the facts" (*Brain*, 1915, xxxviii, p. 37).

I hope, therefore, that the absence of pathological findings in this paper may not render this communication entirely worthless.

The alienist may be called in consultation for the following reasons in cases where there is aphasia :

(1) Because of the confused or incomprehensible speech of the patient and other conduct suggesting confusion or disorder of mind, the nature of the speech affection being misunderstood by his relatives, and not always recognised by the practitioner. This is especially so in those cases where there is no hemiplegia associated with the aphasia, but also occasionally in cases where there has been a previous transient hemiplegia, or even some slight right-sided paralytic signs or unrecognised hemianopia, so that in taking the history one may be confronted by such descriptions as "talks incessantly, uses the same word again and again, shouts at times and shows excitement"; "on waking up was unable to speak, did not know anything, and was mumbling"; "could not find words, was worried and excited, then violent and resistive"; "was light-headed, could not see or read properly"; "makes inarticulate noises"; "talked babble, emotional and angry, but no loss of consciousness"; "talked gibberish, cannot put six words together"; "said to be 'mad' and could not speak properly"; "was brought back home and did not know how to eat, was thought to be intoxicated"; "speech incoherent"; "said to be childish and incompetent and imbecile"; "emotional and confused, unable to read, does not ask for anything or propose anything"; "speech inarticulate"; "found walking about in his office unable to speak, then talked gibberish." Sometimes such patients are found wandering in the street, unable to give any account of themselves, and are regarded at first as being demented. Brissot calls attention to the various speech disorders met with in insanity, which require careful differentiation from true aphasia of organic origin.

(2) Because of definite signs of mental disorder predominating over the aphasic speech troubles. Previous attacks of insanity may have occurred and been recovered from and the attack of aphasia may occur in association with a return of the previous symptoms, or be masked by loss of memory, mental confusion, or apraxia. As Brissot says (*L'aphasie dans ses rapports avec la démence et les vésanies*, Paris, G. Steinheil, 1910): "Many aphasics are met with in asylums whose internment is justified by demential or vesanic troubles." Ideas of persecution (sometimes justified) may be met with, or temporary excitement, delusions and hallucinations, coming on immediately after a "stroke." During my residence at Bethlem Hospital some eleven patients who had either previously been aphasic, or were so at the time of admission, were admitted under certificates, and many such may be met with in the wards of county asylums.

(3) To decide on the proper care and treatment of patients in whom aphasia of various degrees of severity is associated with disorder of mind and conduct. Many of these, of course, can be treated at home, if the means and accommodation allow of proper nursing and supervision, but, as Savage has often said, "the treatment of insanity frequently depends on the length of the purse," and the infirmaries wards of county asylums afford better care in such cases in the poorer classes than can be met with in any but the best of the workhouse infirmaries.

(4) To assist in forming a prognosis as to mental recovery or otherwise, or in the diagnosis from other organic conditions, such as general paralysis.

(5) To give an opinion as to the business or testamentary capacity of a patient suffering from aphasia, or occasionally to assist in the solution of the question of responsibility of an aphasic in criminal cases.

(6) Occasionally it has happened to me to be consulted by a patient with manifest aphasia, about his or her own mental condition, as to why there was difficulty in writing letters, and in getting "command of words," and what was the outlook for the future.

In all some forty-five cases of varying degrees of severity of aphasia and mental disorder have come under my notice in the last thirty years.

Dejerine (*Sémiologie des affections du système nerveux*, 1914) points out that the degree of change of intelligence in cases of aphasia depends on (1) the extent and intensity of the lesion, (2) its reaction on neighbouring regions, (3) on the state of the vessels, (4) on the condition of the circulation and kidneys, (5) especially on the age of the patient, and says: "Il ne faut pas oublier qu'un aphasique peut devenir dément, de même qu'un dément peut devenir aphasique."

It will be well to give statistical particulars of my cases as to the age of the patient, the condition of the heart, vessels, and kidneys, the presence or absence of definite hemiplegia, and also as to heredity, previous attacks of insanity, and history of syphilis or alcohol.

(1) *Age*.—The average age of the male patients was 57·6. But, excluding syphilitic cases, four of whom were under 40 years of age, the average age was 62. The average age in the cases with a history of syphilis was 47, showing the much more detrimental effect of this poison on the arterial supply of the brain than mere senile or presenile degenerative changes. The average age in women was 62, and there were no syphilitic cases. In each sex the average age was somewhat higher in those cases seen in consultation than in those found at Bethlem Hospital.

(2) Definite heart disease, either valvular or degenerative, was found in 26 *per cent.* of the men and 22 *per cent.* of the women.

(3) Renal disease was found in 26 *per cent.* of the men and 11 *per cent.* of the women, and there was glycosuria in one of each sex.

(4) Arteriosclerosis was found in 29.6 *per cent.* of the men and nearly 17 *per cent.* of the women.

(5) A history of alcoholism was found in 26 *per cent.* of the men and nearly 17 *per cent.* of the women. In many cases several of these factors were combined.

(6) Definite hemiplegia more or less pronounced was found in nineteen out of twenty-seven cases in men. In all but one of these cases the hemiplegia was on the right side at the time of observation, and in that one case the patient, who was syphilitic and was under care in Bethlem Hospital for acute mental excitement, suffered from seizures, with left hemiplegia and anæsthesia ending in coma and death. There was, however, a history of a former attack of right hemiplegia and aphasia which had ended in recovery. *Post-mortem* there was found obliteration of the right middle cerebral artery by syphilitic arteritis with recent softening of the area supplied by it, and also old syphilitic arteritis of the left middle cerebral with an old cavity in the left internal capsule accounting for the former attack. Ten women out of eighteen had right hemiplegia either early or late in the case, and one of them had had a previous attack of left hemiplegia. In no case was left hemiplegia immediately associated with aphasia.

(7) A family history of insanity, neuroses, or alcoholism was found in 33 *per cent.* of the men and 39 *per cent.* of the women. In one case the patient's brother and sister had both died of right hemiplegia with aphasia.

(8) Previous attacks of insanity which had passed off had been present in three cases, but in many mental disorder or failure was present for some time before the onset of definite aphasia.

The cases which have come under my notice seem to me to be divisible mainly into four groups, *viz.* :

(1) Those in which dementia, or mental disorder or failure sometimes amounting to certifiable insanity, preceded the more definite and classical affection of speech designated as aphasia.

(2) Those in which considerable mental failure was concurrent with or subsequent to an attack of aphasia. In severe and fatal cases the extreme mental dissolution of coma is seen.

(3) A third group in which, although there is severe affection of speech, the patient possesses such a degree of mental capacity as to permit of business or testamentary capacity.

(4) Cases in which there is some slight hampering of speech with very little mental disorder, although some may be present.

With regard to the *first* group it will be manifest that a patient who

has already become disordered in mind is likely to have his mental capacity further deteriorated by the additional weight of an attack of aphasia, though this result does not always follow.

Hughlings Jackson has well said: "To speak is not simply to utter words, it is to propositionise"; "the unit of speech is a proposition." And again: "Loss of speech is, therefore, the loss of power to propositionise. It is not only loss of power to propositionise aloud (to talk), but to propositionise either internally or externally, and it may exist when the patient remains able to utter some few words" (*Brain*, 1915, xxxviii, pp. 113, 114).

If, therefore, his mind has first failed and his ideas and propositions have become morbid ones or there has been such defect of memory that recent events are not recorded and the patient lives in the past, as in many senile cases, it will be evident that as he has been "lame in his thinking" before the occurrence of definite aphasia, the lameness of thought will tend to be worse afterwards. The addition of "inferior speech" and "inferior comprehension" makes the ruin more complete.

To quote Head (*Brain*, 1915, xxxviii, p. 23): "Suppose, however, 'imperception' is added to the defect of speech, the formation of images, arbitrary symbols and those unconscious processes which precede their development will be disturbed. The 'general intelligence' will then appear to suffer greatly; for the mind will be struck, not only on its emissory, but also on its receptive side."

In this first group "imperception" has in many cases preceded the defect of speech, and the "general intelligence" has already suffered.

I have already pointed out that, excluding syphilitic cases, the average age of patients has reached the seventh decade of life, and that cardiac, arterial, or renal changes are frequent, therefore it may be safely assumed that there is commonly in these cases some degenerative change in the cortex or other tissues of the brain with deficient blood supply, the occurrence of aphasia marking a more definite pathological change in some part of the speech areas of the cortex. This complication naturally increases the gravity of the prognosis so far as life is concerned, and such cases frequently die of cerebral hæmorrhage or softening.

A few selected cases are given:

(a) Mrs. R—, widow, æt. 60, seen May 25th, 1908. No heredity, no history of alcohol. For several years memory had progressively failed so that it was said to have become blank. Two months before I saw her she had had seizures with loss of consciousness and stertorous breathing, after which she appeared not to recognise her children and lost control over the bladder. She was said to be "incoherent and not able to put six words together." When I saw her she had no hemiplegia, she could not express herself, constantly using wrong words in

trying to answer questions. She could not name objects, and could not tell the time by a watch. She was word-blind, and could not read even her own name, or do what was written, and could not write. She was not, however, word-deaf, but did simple things she was told to do, and repeated words she heard. She was certainly deficient both in internal and external speech and very "lame in thinking."

(b) Mrs. L—, a widow, æt. 78, first seen in August, 1902. Father insane, sister had senile dementia, brother insane, two cousins insane. For some years there had been failure of recent memory; for one year delusions, followed by excitement and confusion, with delusions of poisoning and of her son being arrested. She mistook the identity of people; for instance, mistook her daughter for her own sister, spoke of her husband, who had long been dead, as being alive, then gradually became more childish and demented, and lost control over the bladder. In 1905 she had a seizure, followed by right hemiplegia and loss of speech. She was unable to frame words, but understood such simple orders as to put her tongue out. On one occasion, however, an "occasional utterance" took place under emotional stress. An enema was being given with some difficulty, and a nurse told her not to worry, when she suddenly said: "I will worry." Apart from this, there was absence of external speech, and no test for reading or writing could be made in consequence of the profound dementia. Death followed very shortly.

(c) P,— æt. 63, an accountant, who had been pensioned five years before, in consequence of failing memory and confusion of ideas, by the railway company in whose employment he had been. There was a doubtful history of alcohol and his arteries were thickened. For nearly a year he had become much worse mentally, and was disorientated as to time and locality, did not recognise his own house, had forgotten his age, talked chiefly of his boyhood, thought he was still employed by the railway company, had been threatening violence to his wife and others, was dirty in habits, and apraxic in dressing. On examination, he was found to have slight paralysis of the right side of the face, but no other paralysis. He could talk in a hesitating way, but could not give the name of the town or road in which he lived, could not give his son's name, could not name objects—*e.g.*, "glove," "watch," or "pen"—but recognised the names when spoken; he could not write his name correctly and had not written a letter for some months. He could not say what was the use of a pen, but when asked what I was doing said "writing." He could read print, but did not understand what he had read.

The association of apraxia in dressing and writing with some aphasia, but without hemiplegia, is interesting, and will be referred to later.

(d) Mrs. B—, æt. 48, no heredity, had lived in the Tropics, and had suffered from malaria and dengue fever. There was a history of frequent "whisky and soda," and she acknowledged a craving for it. For some months she had become irritable, she had ceased to write letters, found everything an effort, was said to be talkative and muddled and to forget where she had put things, recent memory had failed, and she never knew the date or day of the week. She was advised to return to England, and on the voyage was alarmed by an impending attack by

torpedo. When seen on July 27th, 1917, her recent memory was found to be bad, but remote memory good, she could not name the month or day. She recognised her failure of memory and craving for alcohol, sleep was defective, and she dreamed of standing by the boats when the torpedo attack was impending. Heart, lungs, and urine were normal, knee-jerks were found to be absent without any other signs of tabes, and there was some tenderness of the muscles of the legs. Catamenia were irregular (impending climacteric). Speech was then normal. She appeared to be a case of alcoholism with some failure of memory and alcoholic neuritis. She had never had a fit. She was advised against alcohol and against returning to the Tropics, which she had a great desire to do when her husband went back in the autumn. Four days afterwards, July 31st, she had a seizure in which she was generally convulsed, bit her tongue badly, passed water and motion, and was unconscious. When seen again on August 2nd, in consultation with Dr. Friend, she had recovered consciousness, and had no paralysis on either side of the face. Extensor plantar response was found on both sides, but knee-jerks were still absent. There was no ocular paralysis, pupils reacted normally, and optic discs were normal. She was, however, aphasic. She talked a great deal, but her conversation was generally quite irrelevant, and she could not ask for anything or give any account of her symptoms. When asked where she had seen me she said, "I am getting nearer, I shall get old and die nearer, and will die in the streets (? Straits), I am getting old, I am getting in the streets soon, I will have to 47, will die in the streets, I am getting tired and cross and nearer 80, soon nearer 97." Then again she said, "Somebody said, never soon die in the streets one day nearer 85 soon." When asked to do so she at once put out her tongue, and it was protruded straight, but was badly bitten on the right side. After being asked several times, "Which is Dr. Smith?" she pointed and said, "It is you." Then she went back at once to her recurring utterances about dying soon. When asked if her tongue was sore she kept rubbing it on the right side, and after being asked several times "Is it sore?" said distinctly "Yes." When asked if she had slept the night before, she said, "Oh yesterday will soon die on Saturday"; then again, "I am getting old and cross and stout nearer 50," "it was on Sunday morning will soon die all nearer 80." When asked if she had headache, she did not answer for a long time, and then said "No." Her answers "Yes" and "No" apparently had propositional value. She could not give the address of the house, kept on saying "nearer 86." She could not read or recognise letters, could not name objects—*e.g.*, watch, knife, etc.—but laughed at the suggestion that these objects were a toothbrush or pencil. She recognised the word "watch" when correctly applied, but could not tell the time. She could not name or count fingers. She could not write. She got out of bed when told to do so for testing knee-jerks and gait, but was rather slow in understanding what was wanted, and all the time kept on with the recurring utterance. She seemed to be word-blind but not word-deaf. Examination of the blood showed a negative Wassermann reaction. On August 23rd the aphasia had passed off with the exception of some difficulty in remembering names; she had a very indistinct memory of the attack or of seeing me

and Dr. Friend ; her memory for dates was still very bad, but she had written a letter and could read. The attack having passed off so quickly, there was no apparent increase of mental failure, but she was evidently in need of nursing supervision. It is very likely, as Hughlings Jackson suggested, that the recurrent utterances referred, however imperfectly, to what she had been thinking or discussing about her case immediately before she had the seizure.

The *second* group of cases—*viz.*, those in which considerable mental failure is concurrent with or consequent on an attack of aphasia—contains many examples of the different ways in which aphasia may manifest itself, and here I make no claim as it were to “pigeon-hole” the cases according to the various speech-centres which have been described in works on aphasia. As Collier says (“Recent Work on Aphasia,” *Brain*, 1908, xxxi, p. 539): “Recorded cases show every degree both of severity and permanence, and they give no means of clinical distinction between cases claimed as examples of Broca’s aphasia and of Wernicke’s aphasia respectively.”

The following are some examples from my case-books :

(a) Mrs. S—, æt. 67, widow, seen November 27th, 1902. Sister and daughter had been insane. Her urine contained albumen and some sugar. On November 23rd she complained of headache, and the next day “could not find words,” was worried and excited and repeated the word “come,” possibly a recurring utterance due to a feeling of need for help when the attack began. She became violent and resistive, especially after visits by relatives, who considered that she must have “something on her mind” to account for her conduct. When seen she had no hemiplegia. She took a long time to understand what was said, but did simple things such as putting out her tongue when asked. She used words in a wrong sense, saying “upstairs” instead of “downstairs.” Speaking of herself she said “she is very bad.” Some of her utterances had a propositional value, for instance she said to the doctor, “I don’t want you ; go away.” She had other ejaculatory utterances such as, “Albert wants to get to get,” and “I don’t want it,” which were incomprehensible to others. She could not find the word “key” when she wanted to open a box, but called it “linen,” then took out some securities, but could not explain what she wanted to do with them. She could not read or write. She remained mentally enfeebled and unfit to manage herself or her affairs, and died four years later without any definite hemiplegia.

(b) Mrs. D—, æt. 73, widow, seen November 23rd, 1904. Six years before she was said to be deaf, possibly there was some word-deafness at first, but there was no deafness when I saw her. She had begun to miscall objects and gradually lost speech, being able only to make inarticulate noises. Her friends had to stop her from going to church on account of these noises. There was no definite seizure or hemiplegia at the outset. She refused to spend money, and was said to have the delusion of poverty. She became unable to care for herself, and needed constant supervision. When I saw her she could not

speak at all and did not try to, but occasionally made an inarticulate noise. She understood what was said, and at once got her daughter's photograph when her name was mentioned. She could read what was written, and did what she was in this way instructed to do. She could write, but expressed herself wrongly, though the sense of it could be made out; for instance, she had written to her nurse, "I will wash her hair," meaning her own. In answer to my questions as to how she occupied herself and what her age was she wrote, "I am read papers, you are 73." She wrote firmly and quickly in answer to written questions, but always using wrong expressions or pronouns. The proper names of relatives were given correctly. She had no paralysis. The chief defect seemed to be in the motor, or emissory side, as there was no word-deafness or word-blindness. She gradually failed, and died the next year, but no autopsy was made.

There was no doubt in this case of the presence of "internal speech," as shown by her ability to express her thoughts in writing, although there was some defect in this.

(c) S—, æt. 58, widower, seen May 31st, 1911. Father died of apoplexy, mother of cancer. He had an enlarged and irregularly acting heart. Eighteen months before he had suffered suddenly from loss of speech while staying in an hotel, and since then had lost business capacity, so that his business failed, and had to be wound up. There was no hemiplegia. He had no energy, had lost control over his bladder, was apraxic in dressing and feeding himself, and speech was said to be "incoherent." On examination he was very conscious of his speech defect, recognised that he made mistakes in words, and had lost bladder control, and wept about it. He could understand everything said, but answered confusedly, could not always name objects, but knew their uses, for example called a watch "timepiece." After naming "penknife" there was marked perseveration of idea, all subsequent objects shown being called "penknife." In attempting to write he was quite unable to finish words.

This was again a case in which aphasia, apraxia, and agraphia were associated, without hemiplegia.

(d) B—, æt. 83, married twice, had eleven children, had been a hard-headed business man, and was described as a *bon viveur*, and always full of energy. Until five years before he had ridden regularly, but then broke his leg, and ceased to take active exercise. Two years before he had had pneumonia, and since then he had shown signs of cardiac degeneration. For one year he had begun to lose words and to lose his memory. His speech became progressively worse, he was emotional and violent if opposed. He was disorientated in time and place, would get up in the middle of the night and mistake time, would insist on going to the City, but did nothing when there, and on returning could not always recognise his house. He lost control in cleanliness. When first seen on July 12th, 1917, he could slowly understand what to do when told—e.g., to put out his tongue, put his hand on his head, get out of bed and walk round the room. He imitated movements. He tried to talk, but his speech was generally incomprehensible. He could not name a watch or other things, could not tell the time, could not give his address or the name of the road, but recognised names of

objects when repeated to him. It was interesting that although he had lived seventy-four years in this country he could not make sentences in English. He gave his first name in German, and made some attempt to answer in German. For instance, when asked if he knew me he said, "nie gesehen." He could say "Yes" in answer to some questions, but it was often irrelevant and of no propositional value. With regard to his attempt to answer in German, I subsequently learned from his son that the first nine years of his life had been spent in Germany. He was apraxic in various ways, especially in fastening his clothes, and when an attempt was made to get him to write, he did not seem to know the use of the pencil, holding it upside down or letting it drop. He could not write and could not read. He was undoubtedly word-blind, but not word-deaf. There was no hemiplegia, his tongue was not well protruded, but there were no other bulbar symptoms. A fortnight later he was more confused and silly, did not seem to understand so much, was vacant, and had been noisy and violent at times; he was also more apraxic. He said much less, but still tried to use German, and when asked if it was a cold day (it was really very hot) said "ein Bischen." On August 3rd he made inarticulate noises, did not try to speak, was drowsy and confused, failed to recognise people, had no control over emunctories, and had pulmonary congestion with rise of temperature. There was still no definite paralysis. He died in a few days.

It will be noted that in this case also there was apraxia and agraphia with no definite hemiplegia.

(e) Mrs. M—, æt. 81, widow, seen October 3rd, 1904. There was a history of chronic arthritis, of phlebitis ten years before, and of a "threatening of a fit" at the same time. As a child she had lived in Italy, and then habitually talked Italian and French more than English. Since marriage, at the age of seventeen, she had lived in England. On August 5th, 1904, she had an attack or seizure in which she was said not to have lost consciousness but to have "talked babble," and was emotional and angry. When seen she appeared to understand what was said, but screamed when others did not understand her, she talked volubly, but could not frame intelligible sentences which contained many adjectives but no nouns. It was interesting that she spoke Italian and French but no English at this time, the law of dissolution holding good as in the previous case. She could not name objects in any language, but recognised wrong names. She was completely word-blind, could not read or do what was written, and could not write spontaneously or copy. There was at first no hemiplegia, but later weakness of the right side with deviation of the head and eyes and inability to stand developed. Some improvement followed for a time, in which she became more intelligible, and her English returned. Eventually she died.

(f) B—, æt. 56, widower, a German who had long been resident in this country, seen December 12th, 1914. There was a history of syphilis thirty-five years before. In November, 1913, he had had slight right hemiplegia with "some difficulty in words," which had passed off. His urine was albuminous, and he had hypertrophy of the left ventricle. One week before I saw him he had become dizzy, com-

plained of weakness of the legs, and would have fallen if not prevented; seemed unable to read, and was confused and emotional. The day before I saw him he was unable to sign his will, which had been drawn up and to which he had given his approval. On examination he had no paralysis, but some defect in localising sensation. He was apraxic in that he could not feed himself, although there was no paralysis, and on being given a pen held it with the nib reversed. He did not ask for anything or propose anything. He could answer questions slowly, but could not volunteer information about himself or talk spontaneously. He was not word-deaf and did what he was told. He could not name objects, but recognised the correct name. He could not even give the names in German, his native language, with the exception of a watch, which he called "Uhr." He could not tell the time by it, could not give his address, or name the locality in which he lived, or give the month. He seemed to be word-blind, or nearly so, could not read except one or two isolated words, and could not name the letters in words pointed out to him. He was quite unfit to exercise testamentary capacity or to transact business. He died shortly afterwards.

(g) The last case of this group which I shall narrate was H—, æt. 62, married. There was a history of excess in alcohol and sexual irregularity. I saw him on October 12th, 1916. In the previous May he had had a seizure without resulting paralysis, but following which he was unable to read for some days. Three weeks ago he had had another attack, in which he could not speak for one whole night, and could not write or read, and had slight loss of power in the right arm and right side of the mouth. He then recovered speech, but became very depressed and worried, accused himself of moral lapses, especially of sodomy with women, and dreaded prosecution for this, although none was pending, and he could not remember the circumstances. He was completely obsessed by this dread, and had spoken of suicide. On examination he was found to have a systolic mitral murmur and auricular fibrillation. The hemiplegia had passed off. He talked connectedly and answered questions, did not seem depressed, and said he had exaggerated the idea of prosecution, and was not troubled about it any more. He could not give the name of pencil, chain, matchbox, etc., but after giving the name to a watch, he showed perseveration by afterwards calling everything a watch. He could repeat names of objects when told, and recognised their correctness. He could not tell the time or name coins or give their value. He was word-blind and totally unable to read. He could not write even his name spontaneously, but could just copy it. He was quite unable to transact business. His condition was at first masked by his ability to talk. It was quite evident that he could "propositionise," but he had evidently had insane propositions, and this, together with the manifest organic disorder of at least the visual speech area, led to the advice that he should be sent away from home for care and treatment. While arrangements were being made for this he eluded his relations, although they had been warned, went out and bought a gun-licence and a revolver, and shot himself.

It is difficult to say whether this result was determined by the morbid dreads which he had shown or by the difficulty in which he

found himself by his inability to write or read; no doubt both factors acted. Evidently he had sufficient speech, both internal and external, to enable him to come to a decision and carry out his desire.

I have called attention to cases in which apraxia, agraphia, and aphasia were associated. I may say that of eight cases which have come before me in which apraxia in various forms was noted all were also agraphic, but none of them had definite right hemiplegia. In nearly all of them the aphasia was chiefly of the motor type.

S. A. K. Wilson, in a comprehensive study of apraxia (*Brain*, 1908, xxxi, p. 164), calls attention to the reason for believing that there is a centre in the first and second convolution of the left side where movements are combined ideationally analogous to the centre for the co-ordination of movements requisite for speech in Broca's area, and points out that in motor aphasia we have a form of apraxia, and that agraphia is a variety of apraxia, which may be either of sensory or motor origin, and that there may be agraphia without any paralysis. J. S. Collier (*Brain*, 1908, xxxi, p. 529) also refers to the evidence pointing to a lesion of the first and second frontal convolutions of the left side in cases of apraxia, and says "the bearing of this evidence upon the localisation of a motor speech centre in the left third frontal convolution is obvious and striking, for motor aphasia bears the same relation to movements of the muscles concerned in speech as does apraxia to the movements of the limbs."

We now come to the *third* group, in which, in spite of severe affection of speech, the patient possesses internal language and such a degree of mental capacity as to permit of business or testamentary capacity. I shall refer to three cases of this nature.

(a) M—, single, æt. 64, seen May 31st, 1912. There was a history of syphilis twenty-five years before, and he had lived a great deal in South America, where Spanish was his usual language. In August, 1909, he had a seizure, followed by right hemiplegia and loss of speech except for one or two Spanish words. Between July and December, 1910, he had six fits, and two others up to May, 1912. He was considered by a relative to whom he was unfriendly to be childish and incompetent, but he had always been found by his solicitor to be alive to what he thought right for himself. He had exercised volition in signing an authority to his solicitor, and had made a will twelve months before. On examination he was found to have right hemiplegia with wasting and contracture of the right arm. His right leg was weak, and he walked stiffly. His right knee-jerk was exaggerated. He was unable to speak spontaneously, but could say "Yes" and "No" correctly in answer to questions, and they certainly had propositional value. He could not say his own name, he could not give the names of places he had lived in, but recognised the name of a South American town, saying "Yes, yes." He could not always name objects seen, but could repeat the word when it was said, and afterwards there was perseveration of the

idea when a fresh object was shown. He could not name coins, but knew if a wrong name was given. He could say the names of his solicitor and two relatives. His expression was that of intelligence, his hearing and sight were good, he was able to do what he was told, and could pick out objects of which he heard the names. He could not read aloud, but recognised one or two words and repeated them. He appeared to read to himself and could answer correctly "Yes" and "No" as to what it was about. His right arm being completely paralysed he could not write with it. He was, however, able to sign his name slowly with the left hand and had signed an authority in this way to his solicitor to receive money and make disbursements for him. He could copy from print to writing with his left hand, and could write slowly from dictation. In consequence of the laboriousness of writing with his left hand he did not write letters. He showed by gestures and by saying "No, no," that he had antipathy to the relation who thought he was an imbecile. He knew perfectly well whom he wanted to manage his affairs. He could answer as to his income by exclusion when wrong amounts were suggested to him. He was quite happy in a nursing home.

In this case there was no word-blindness or word-deafness, and it seems a fair presumption that this was one of the cases in which Broca's region was chiefly affected as far as speech was concerned, and the history of seizures suggests cortical damage. Internal speech seemed to be unaffected. There was no difficulty in reporting that he was able to understand and execute a legal document, which was the question at issue.

(b) D—, æt. 83, widower, seen March 13th, 1917. He had lived abroad for many years and most of his immediate relatives being well provided for he had made a will in December, 1915, leaving various legacies to friends and a nurse who had attended him through a severe illness five years previously and one to a nephew. On May 15th, 1916, he had an attack of right hemiplegia with aphasia. He was speechless except for occasional ejaculatory words. He could not read aloud or understand written language, he could write his name automatically, but could not copy it, and could write nothing else. He was certainly "word-blind." He was not, however, "word-deaf," but could understand what was said and do what he was told. He could by gesture express agreement with or dissent from leading questions. On July 7th, 1916, he had another attack depriving him entirely of speech. His mind was said to be much more confused but not blank. Some months later he appears to have made some improvement in intelligence although he remained speechless, and was said to show dislike to the will he had made and appeared to want to improve the position under it of the relative who had shown much attention to him in his illness. Although he could not speak he went through the gesture of striking out the name of an old friend to whom he had left money, and he seemed agitated and emotional. He was unable to give instructions either orally or by writing to his solicitor, and neither the latter nor another physician considered him at that time to be in possession of testamentary capacity. Further improvement in his condition took place and he frequently conveyed the impression of dislike to his will as it stood and was often looking at it. When seen on March 14th, 1917, he was still

suffering from defect of speech, but the hemiplegia had to a great extent passed off. He could answer questions in monosyllables, but frequently used wrong words in trying to speak. He often took hold of his tongue, as if he felt it would not work properly and knew he was using wrong words. His answers "Yes" and "No" were to the point, and had propositional value, and his memory appeared to be good when interrogated about his past life and occupation, the names of his relatives, and the extent of his property. He gave assent readily and emphatically to the question as to whether he wished to alter his will. He occasionally said a short sentence, and gave the names of relations. He definitely expressed affection or dislike for individuals, and was found to have knowledge of those whom he would naturally benefit and of the reasons for doing so. All this was elicited by a long series of questions, and by propounding to him suggestions to which he was able by gesture and emphasis and by the tone of his answers to give reasonable assent or dissent. His expression was that of a man alert and appreciative of the position. He was unable to read aloud, but was able to read to himself and showed by answers that he appreciated what he read. He could not write his name but made attempts to do so. On this occasion he was neither word-deaf nor word-blind, the chief defect appearing to be a motor one both in speaking and writing. A full report was made as to his condition, and the opinion given that he now appeared to have testamentary capacity. At a subsequent interview with his solicitor and another physician it was possible to take instructions from him and a fresh will was executed.

(c) Miss R—, æt. 60, seen April 12th, 1913. Brother and sister both had right hemiplegia and aphasia. Both ovaries had been removed some years before, and she had also had the operation of "short circuiting" in consequence of intestinal trouble. After this a drug habit had begun, dating from the use of morphia to relieve pain. In the autumn of 1912 she had had a short attack of mania from which she had recovered. A short time before I saw her she had had an attack of what was supposed to be influenza, followed by right hemiplegia and hemianæsthesia. For three days she could not talk clearly and for ten days she could not sign her name. She had recovered writing to some extent but complained that she could not "make the pen spell." In talking she missed words and used wrong words, could not name objects, but knew their uses. She complained of losing her brain, and said she had better be locked up. She knew who were her relations and the extent of her means and whom she wished to benefit, and had no delusions. She was anxious to know if she was fit to make her will, and after a full consideration of her condition the opinion was given that she had testamentary capacity.

In these testamentary cases the same general rules apply as in cases where there is no aphasia—namely, that the testator "shall understand the nature of the act and its effects; shall understand the extent of the property of which he is disposing; shall be able to comprehend and appreciate the claims to which he ought to give effect; and, with a view to the latter object, that no disorder of the mind shall poison his

affections, pervert his sense of right, or prevent the exercise of his natural faculties, that no insane delusions shall influence his will in disposing of his property, and bring about a disposal of it, which, if the mind had been sound should not have been made."

In cases such as I have mentioned the extreme importance of long unhurried interviews need not be emphasised. Moreover, there is the more need in such cases for an accurate record of the questions put to the patient and his answers, whether in faulty speech or writing, or associated with gestures and emotional emphasis. The use of shorthand in this respect is very great.

Sir William Gairdner, in opening a discussion on "Aphasia in Relation to Testamentary Capacity" (British Medical Association, Annual Meeting, Edinburgh, 1898; *British Medical Journal*, 1898, ii, p. 581), laid stress on the point that "The fact of aphasia (unless it be very limited in extent) interferes either with the graphic and visual speech processes or with the auditory and vocal speech processes, and therefore throws the *onus probandi* upon those who consider the will genuine or wish to prove the will genuine."

Hughlings Jackson has well said: "Such a question as 'Can an aphasic make a will?' cannot be answered any more than the question, 'Will a piece of string reach across the room?' can be answered. The question should be: 'Can this or that aphasic person make a will?'" (*Brain*, 1915, xxxviii, p. 115).

In other words every case must be considered on its merits after the most careful examination.

I shall not give any details of very slight cases, or of those cases which have come under my notice where a severe vascular lesion causes right hemiplegia and aphasia, ending quickly in death.

It will be well to consider how far these cases correspond with Hughlings Jackson's views on aphasia. I may take it that his great principle that dissolution occurs first in the most highly organised products of neural or mental activity, leaving the more lowly at liberty to express themselves freely in the resulting symptoms, is beyond dispute. Positive and negative symptoms are seen both in the mental state and in the condition of speech, but the preponderance of senile cases accounts for the fact that the negative side is the more conspicuous, as shown by the frequent occurrence of loss of memory and perception, of judgment and control.

The return to an early acquired language and the loss of a more recent one in attempting to speak has been exemplified in some of the cases narrated.

Hughlings Jackson divided cases of aphasia into two classes:

(1) Severe cases in which the patient is speechless or nearly so, or in which speech is very much damaged, and

(2) Cases in which there are plentiful movements but wrong movements, or plenty of words but mistakes in words.

These groups have been exemplified in various degrees in my cases, as have also his differentiation of speech into superior and inferior, internal and external, his description of recurring utterances and occasional utterances, and his insistence as to the use of the words "Yes" and "No" as being in some cases of propositional value, though often otherwise.

With regard to recurring utterances, I may refer to Jackson's view (*Brain*, 1915, xxxvii, p. 158) that the lesion in the left half of the brain "is not the cause of the recurring utterance," and that if the patient had not been "taken ill" he would not have had such a recurring utterance as "he would have been able *not to utter it*" (italics in original).

Again, he says (p. 174) : "A patient who recovers soon from aphasia loses his recurring utterance, becomes able not to utter it." In other words the higher centre has regained control and prevented the over action of lower centres. It appears to me that the case of one lady mentioned above is a good illustration of this.

Hughlings Jackson held that speech was a part of mind and that we must get rid of the feeling that there was abrupt and constant separation into mind and speech. At the same time he pointed out clearly the fact that in some cases there may be great affection of external speech and yet little affection of mind, as shown by the evidences of internal speech especially in writing. In one of the cases I have narrated the patient having practically no external speech was also unable to write with his right hand and very little with his left, yet there was no doubt that he had considerable mental capacity. On the other hand, a patient who had a considerable amount of external speech, but who had lost writing, was so disordered in mind that he had delusions and committed suicide.

I have shown that aphasia may supervene on pre-existing insanity or mental decay, no doubt due to vascular or degenerative changes, which might have led to the same result in the absence of the mental disorder, and that, on the other hand, aphasia may be the first symptom indicative of cerebral and mental decay. In such cases the question arises how far the mental disorder is intimately associated with the aphasic disturbance of speech or is due to widespread vascular and nutritive changes in the brain. The mental disorder does not necessarily amount to certifiable insanity, but may in varying degrees affect such mental processes as perception, memory, emotion, and volition, without much disorder of conduct. It appears to me that in all my cases, except those which may be looked upon as examples of Broca's aphasia, there has been some disorder of mind, though not always

marked failure of intelligence. In a review of the question of aphasia (*Review of Neurology and Psychiatry*, 1909, vii, p. 151) S. A. K. Wilson says: "Speech is but a specialised part of the intellect. And, therefore, there can be no disturbance of the function of speech, however slight, in which there is not a disturbance of certain psychical states." He, however, combats Marie's view "that in cases of aphasia (*i. e.*, in Marie's sense) defect of intelligence only occurs and always occurs in lesions behind an imaginary line drawn from the posterior end of the island of Reil transversely to the lateral ventricle." I cannot believe that the disorder of mind in such cases as I have observed is only associated with a lesion of a single centre of intellect specialised for language, but believe that, on the contrary, it is associated with widespread vascular and nutritive changes in the brain, such as are commonly found in senile or syphilitic cases.

Once more to quote Hughlings Jackson (*Brain, loc. cit.*, p. 167): "We must bear in mind that 'will,' 'memory,' and 'emotion' are only the names men have invented for different aspects of the ever present and yet always changing latest and highest mental states which in their totality constitute what we call consciousness."

In conclusion, I may say that my observation of those cases of aphasia which have come under my notice leads me to agree completely with the views expressed by Henry Head in the Summary at the end of his paper, to which I have already referred.

Further Observations on Experimental Toxi-Infection of the Central Nervous System (1). By DAVID ORR, M.D., and Major Rows, R.A.M.C.

This communication is a continuation of our experimental work on the action of bacterial poisons upon the nervous system.

In 1914 (2), after several series of experiments, we drew attention to the differences between lymphogenous and hæmatogenous infection. The first was induced by infecting the ascending lymph stream of nerves; the second by placing celloidin capsules containing a culture of bacteria in the abdominal cavity. Lymphogenous infection was found to be characterised by:

- (1) Reaction of the cells of the fixed tissues.
- (2) Proliferation of the cells of the adventitial sheath of veins and capillaries.
- (3) The appearance of scavenger cells to remove disintegrated myelin.
- (4) Nerve-cell degeneration and neuronophage phenomena.

In hæmatogenous infection we found :

- (1) The nerve-cells suffered least of all.
- (2) Primary degeneration of the myelin sheath round the cord margin and along the postero-median septum.
- (3) Œdema of the cord.
- (4) Dilated vessels and hyaline thrombosis.

In brief, lymphogenous infection produces an inflammatory lesion of the central nervous system, while in the hæmatogenous variety inflammation is reduced to a minimum, and primary degeneration of the myelin sheath is a prominent feature.

We drew attention to the implication of the sympathetic system in the abdominal operations, but did little more than hint at its rôle in the causation of the cord lesions.

At this stage certain conclusions were drawn—*viz.*, that general paralysis and tabes dorsalis were lymphogenous infections ; and that the non-systemic degenerative lesions found in cancer cachexia, pernicious anæmia, Addison's disease, etc., came under the heading of hæmatogenous infections.

In the above experiments the results of toxic action were studied in the spinal cord only ; in the present series the research has been extended to the brain, and the capsule containing a culture of the *Staphylococcus aureus* was placed in contact with the common carotid artery in the neck. The experiments, though limited in number, have given positive results so far, and are worthy of record, as they help to explain the pathogenesis of certain obscure lesions of the central nervous system found in man. Hyaline thrombosis was found to be a constant result in the cord examined when the capsules were placed in the abdominal cavity, and we find the same morbid change in the vessels of the brain when the capsule is placed against the carotid sheath. The lesions to be described are the direct result of this thrombotic change, and vary in kind with the situation of the local ischæmia and the degree to which the local vascular supply is interfered with.

Rabbits were used for experiment, and we have observed two types of lesions so far.

(1) Coagulation necrosis of the nerve cells in the cornu ammonis, in the cerebral cortex, and in the amygdaloid nucleus.

(2) Softening in the stratum moleculare of the cornu ammonis.

Before entering upon a description of the lesions in the cornu ammonis, it is necessary to look for a moment at the structure of this organ. The cornu ammonis of the rabbit consists in, from without inwards, the alveus, the stratum moleculare, the lamina ganglionaris, which is composed of pyramidal cells, the stratum radiatum, and, most internal of all, the lamina involuta, whose tangential fibres surround

folia of the pia-arachnoid invaginated from the mesial surface of the cerebral cortex.

In one case an area of about one-sixth of the circumference of the lamina ganglionaris showed a marked degree of coagulation necrosis of the pyramidal cells.

In frontal sections, stained by toluidin blue, the cells of the lamina ganglionaris are densely packed together. Normally, each shows a thin cell body prolonged into an apical dendrite, which projects into the stratum radiatum; the nucleus is relatively very large, is clear, round, or slightly oval; it possesses a nucleolus and two or three particles of chromatin. The chromophile material of the cell body is in an amorphous condition; the apical process stains exceedingly faintly, and is perceptible in the stratum radiatum for a short distance only. The area of the ganglionic lamina affected by coagulation necrosis stands out in marked relief owing to the strong affinity for the aniline dye possessed by the degenerated nerve-cells. This area is sharply marked off from, and is appreciably narrower than, the normal portion on either side. Even with a low power the distortion of the altered cells is perceptible, and the sharp definition of the degenerated zone is strongly suggestive of local vascular occlusion. With higher magnification the nerve-cell body and nucleus are seen to be deeply and diffusely stained; both are shrunken and much distorted. The axis-cylinder, which normally is scarcely distinguishable, can be followed into the molecular layer, in which it is seen to give off numerous branches. The apical protoplasmic dendrite is quite prominent, is stained diffusely, at times slightly granular in appearance, and pursues a tortuous course into the stratum radiatum. These alterations are typical of the condition known as coagulation necrosis.

With Van Gieson's method the degenerated area is very distinct. Normally, the nerve-cell nucleus stains a violet colour by this method and is clear. In the affected cells the structure of the nucleus can no longer be seen, and the degenerated shrunken cell body is yellow in the centre, while its edge is of a reddish-orange colour. The tortuous apical process stains in a similar fashion, and can be followed for a considerable distance into the stratum radiatum.

In another case two small areas of coagulation necrosis were observed in the cornu ammonis, one at the inner and one at the outer pole. The morbid area at the inner pole of the cornu ammonis was larger than that at the outer, and not so extensive as in the experiment described above.

By toluidin-blue staining there is no shrinkage of the ganglionic lamina in the areas affected, and the nerve-cells are not quite so distorted as in the previous case. Both cytoplasm and nucleus stain very diffusely. By Van Gieson's method they stain a diffuse orange-yellow,

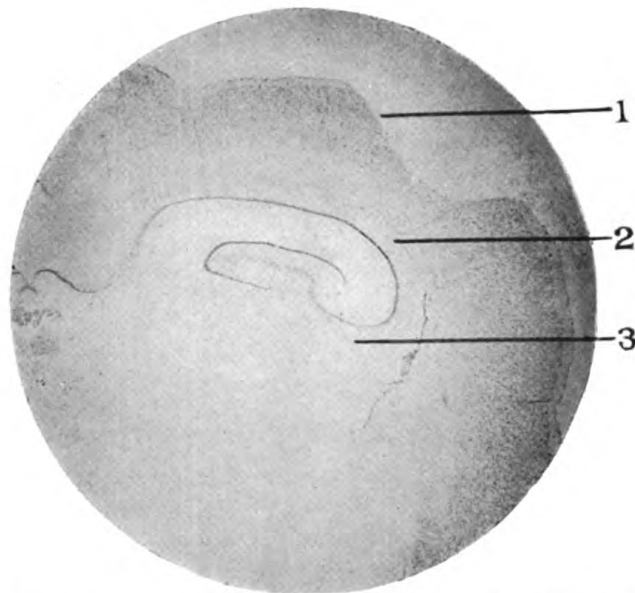


FIG. 1.—Photomicrograph of frontal section through brain of rabbit. Stained by toluidin blue. 1, cortex cerebri; 2, ganglionic layer of cornu ammonis; 3, fimbria fornicis. The higher power photographs are taken in areas 2 and 3.

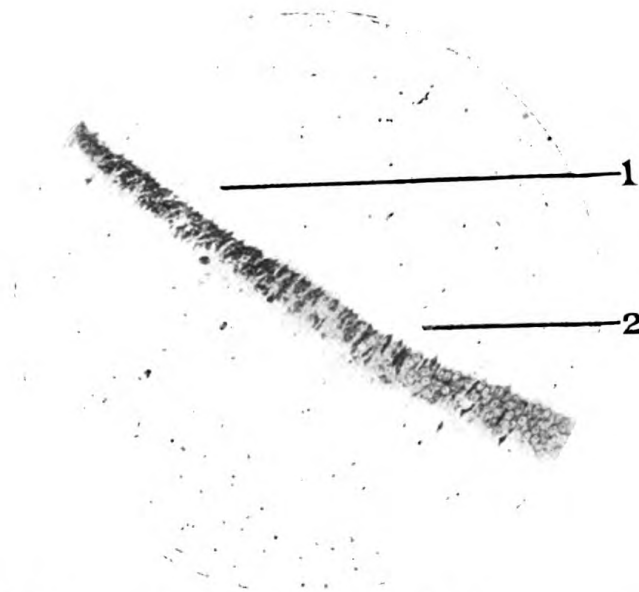


FIG. 2.—High-power view of lamina ganglionaris of cornu ammonis. Toluidin blue. 1, note the shrinkage and diffuse staining of the nerve-cells; 2, junction of morbid with normal area, in which the clear nucleus of the healthy nerve-cells is prominent.

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and stand out sharply from the normal cells of the lamina. The centre of the cell, *i.e.*, the area occupied by the nucleus, is a deeper yellow than the periphery.

The second type of lesion, ischæmic softening, was met with in one experiment and consists in the softening proper plus the accompanying secondary inflammatory phenomena, the result of the irritative effects of degenerative products on the surrounding tissues, and in the reaction incidental to repair. The softening proper is situated in the stratum moleculare; it just touches the lamina ganglionaris on the one side and the fornix on the other. It consists in layers which can be differentiated into four for purposes of description. The first, in the centre, is composed of detritus, amongst which can be seen altered red-blood corpuscles, fragments of nuclei deeply stained, and some clear, faintly stained, distorted, oval nuclei. Immediately outside this area is a narrow band of round, deeply-stained nuclei, some of which are surrounded by a small quantity of protoplasm. These are loosely arranged and amongst them lie many granular epithelioid cells. The third layer of epithelioid cells or compound granular corpuscles is not sharply marked off from the second of small round cells, and is a dense layer. These epithelioid cells possess a large cell body of varying shape—the result of pressure—which is finely fenestrated, and the nucleus, almost invariably of medium size, is round or oval and clear. A large number of epithelioids show vacuolation, and it is worthy of note that in only a very small number the nucleus is of the small, dark, shrunken, and excentrically placed type so characteristic of the scavenger cell in softenings of long standing. Outside the area of scavenger cells the inflammatory phenomena consists in round cells, reaction on the part of the neuroglia, and in proliferation of the adventitial cells of the neighbouring vessels.

The small round cells lie free in the tissue and possess a rounded or oval nucleus deeply stained and filled with chromatin. The cytoplasm is finely granular and varies considerably in quantity. In some it forms a very narrow band round the nucleus, in others it is in greater quantity, placed for the most part to one side of the nucleus and is vacuolated. These features are found in the plasma cell in the early phases of its development.

The neuroglia participates actively in the inflammatory reaction, and round the area of softening there is much neuroglial proliferation and hypertrophy. In those cells undergoing active hypertrophy the nucleus is enlarged, round or oval, and clear; the cytoplasm is greatly increased in quantity, is vaguely granular, stains more deeply at its edge, and is prolonged into short, thick processes. This is the amœboid type and between this and the normal are many pre-amœboid stages. Lying amongst the above are cells with an oval, pale nucleus situated at one

extremity of a large protoplasmic body. There are others, somewhat similar in type to these, in which the body is more fusiform. Both varieties resemble young fibroblasts very closely. Many neuroglia cells are in a degenerative phase; the cytoplasm is disintegrating, and the nucleus has undergone shrinkage and stains diffusely. In another type of glia cell, found at the periphery of the softening, the nucleus is small, dark, and usually rounded, though in some instances it is slender. The cytoplasm streams away from either end of the nucleus in a thin elongated process which is not uncommonly branched, when the cell is quite indistinguishable from the "stäbchenzell" so frequently found in certain inflammatory conditions, and acknowledged to be a derivative of the neuroglia or adventitial cells, though for the most part from the former.

There is a high degree of proliferation of the adventitia of the small vessels in the immediate vicinity of the softening. The adventitial nucleus has become rounded, reduced in size, rich in chromatin, and surrounded by a finely granular, protoplasmic body. The adventitial sheath is packed with young plasma cells similar to those lying free in the surrounding tissues. The small venules and capillaries at a little distance from this softened area show a lesser degree of adventitial proliferation. This reaction can be followed inwards as far as the median portion of the fornix, laterally amongst the venules of the lateral ventricles, and affects in a marked degree the small vessels in the stratum radiatum and the lamina involuta which form the inner parts of the cornu ammonis.

In the cerebral cortex there are no gross lesions such as the ischaemic softening in the cornu ammonis, but the nerve-cells exhibit varying degrees of coagulation necrosis. A description of this morbid change has been already given in the case of the ganglionic layer of the cornu ammonis. The cortical cells show precisely the same morbid features and staining reactions so characteristic of this type of affection. The coagulation necrosis is not distributed in a uniform manner throughout the cortex in each experiment. Sometimes the upper and lateral regions may contain the degenerate cells, while the mesial, insular, and under surfaces are quite normal or practically so. On the other hand, the morbid change may involve the mesial, upper, lateral, and under surfaces of the cerebrum, thus embracing the pallium and rhinencephalon. When the olfactory lobe shares in the necrotic change its necrosed cells show up very prominently, owing to the sharp contrast between the ganglionic layer and its covering clear molecular lamina.

In the superior and lateral areas of the pallium the morbid change varies in degree from point to point, contiguous territories showing slight variations in intensity; and all the cortical cell laminæ are not involved in the necrotic change. For our present description we may

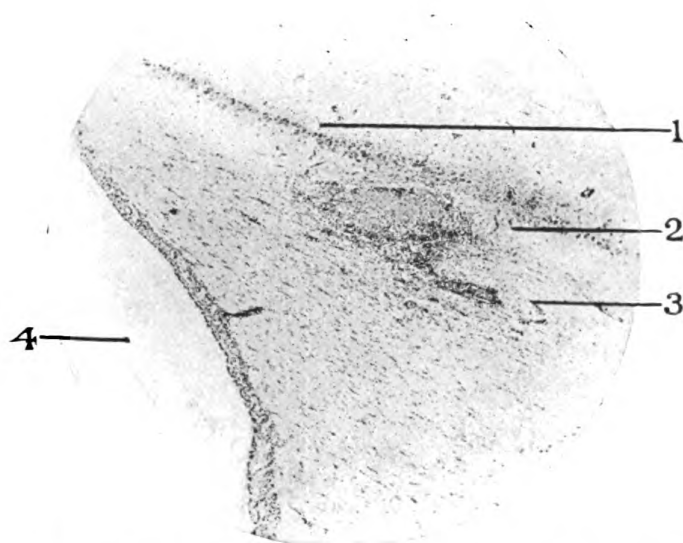


FIG. 3.—1, Lamina ganglionaris of cornu ammonis; 2, area of ischæmic softening; 3, vessel showing periarteritis; 4, lateral ventricle.

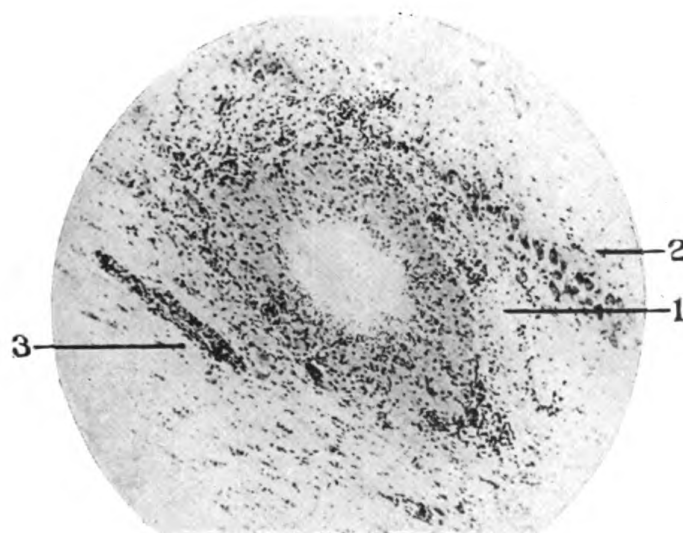


FIG. 4.—1, Area of softening under higher magnification; the central necrotic zone is surrounded by compound granular corpuscles and small round cells; 2, nerve-cells of lamina ganglionaris; 3, periarteritis.

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divide the cortex into, from without inwards: (1) The molecular zone, (2) the external granular zone, (3) pyramidal layer, (4) internal granular zone, (5) ganglionic layer, (6) multiform layer. All these zones are not always distinct or present; certain variations in cell lamination occur in different portions of the cortical field, but the layers as given above serve our present purpose.

The whole depth of the grey matter does not exhibit coagulation necrosis of the nerve-cells. The morbid change includes all the outer layers as far inwards as the ganglionic lamina; it is rare to find morbid nerve-cells in the deepest or multiform layer. In the outer layers the degenerate nerve-cells may be very numerous or in fewer numbers according as one passes from one point to another, and granule and pyramidal cells are affected indiscriminately.

So far we have not met with any proliferative changes in the neuroglia of the cortex, either in the molecular zone or elsewhere, but in the capillary walls there is evidence of an early reaction shown by the hyperchromatism and rounding of the wall nuclei. The vessels throughout the brain are dilated, congested, and are the seat of hyaline thrombotic changes to which further reference will be made.

In addition to the cortical areas above referred to there are two other regions whose cells are necrotic, and one, the cornu ammonis, has already been dealt with. But there is another, the amygdaloid nucleus, whose cells show as intense a degree of morbidity as in any of the areas already described. The amygdaloid nucleus is situated in the anterior portion of the temporal lobe. Its lower part joins with the tail of the caudate nucleus, above it is carried into the putamen of the lenticular nucleus, while anteriorly it is continuous with the temporal grey cortex. In the sections under description, it appears as an elongated oval beneath the basal ganglia, and its cells show the shrinkage and diffuse staining so characteristic of coagulation necrosis, throwing the entire nucleus into sharp contrast with the surrounding parts. It is, perhaps, not without significance that in the experiment in which this nucleus was affected the cornu ammonis of the same side showed a definite band of coagulation necrosis in the ganglionic layer. Still, for the present, one would hesitate in the absence of more extensive observation and confirmation to lay stress upon what may be a coincidence.

The areas which show lesions in these experiments are the cortex of the pallium and rhinencephalon, the cornu ammonis, and the amygdaloid nucleus. In the cornu ammonis there are two distinct zones affected, and in each the pathological lesion is widely different in type. In the one where the ganglionic layer is the seat of the lesion the cells show coagulation necrosis, precisely the same variety of morbid change exhibited by the cells of the cerebral cortex and the amygdaloid nucleus; on the other hand, where the white matter of the cornu

ammonis is involved, *i.e.*, in the stratum moleculare, the lesion is of a totally different nature. Here a localised ischæmic necrosis has occurred with all the hæmorrhagic and inflammatory phenomena peculiar to a thrombotic infarct.

It is of importance to note that the above areas and no other are the seat of morbid changes, and that they are supplied by cortical vessels derived from the pia-arachnoid. This is obvious in so far as the pallial and olfactory cortices are concerned, but at first sight not quite so apparent in regard to the cornu ammonis and amygdaloid nucleus. We know, however, that the central portion of the cornu ammonis—the lamina involuta—is penetrated by folia of the pia-arachnoid accompanied by vessels; while the amygdaloid nucleus is continuous with the grey matter of the temporal lobe. The affected areas, therefore, all possess one important point in common, *viz.*, their blood-vessels are derived from the pial system, a fact which explains the inclusion of the above-mentioned nuclei in the morbid process.

The lesions in the brain agree anatomically with what was observed in the spinal cord in an earlier series of experiments on animals when, after the abdominal cavity had been infected by toxins, the myelin was found degenerated round the margin of the cord and on either side of the postero-median septum, while the central portions, including the grey matter, remained intact. Here, again, the degenerated elements lay within the zone of pial supply and had suffered exclusively. If we substitute grey for white matter in the two series of experiments the anatomical distribution of the morbid lesion is essentially similar, *i.e.*, the peripheral portions of the central nervous system subserved by branches from the pial vascular system are affected.

The morphological character of the lesions in the brain point very clearly to the disturbance of the circulation and therefore of nutrition. This, in the cerebral cortex, affects a wide area and finds its expression in the necrosis of nerve-cells in all laminæ except the deep multiform layer, unaccompanied, however, by any local ischæmia indicative of complete vessel blockage. The evidence of a much more severe local nutritional disturbance is very obvious in the ganglionic and molecular layers of the cornu ammonis, where, in the former, a short segment of nerve-cells is necrosed, and sharply defined from the normal cells on either side; and in the latter, where a necrotic softening with all the histological phenomena incidental to an infarction have occurred. The cause of the disturbance of the circulation is to be found in the morbid condition of the cerebral vessels, which are dilated, engorged, and show many varieties and degrees of hyaline degeneration of their contents.

In some vessels the corpuscles are normal or nearly so, but the majority show hyaline changes, and as a result of this hyaline thrombosis has occurred, which is recognisable in its various stages from the early,

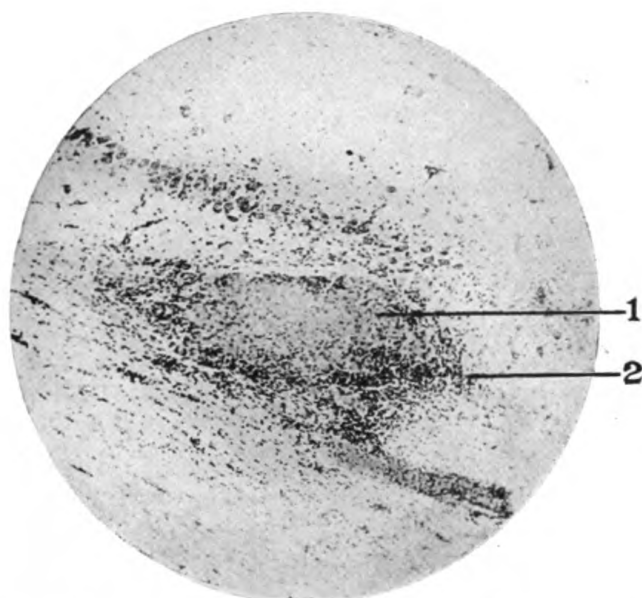


FIG. 5.—To show : 1, the compound granular corpuscles surrounded by 2, small round cells.

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where the vessel is still permeable, to the complete, where occlusion becomes inevitable. Arteries, veins, and capillaries are affected, and the thrombotic change, accompanied by dilatation of the perivascular and pericellular spaces due to œdema, is found in the vessels of the pia-arachnoid, the grey, and the white matter.

All elements of the blood participate in the thrombotic process. In incomplete thrombosis the hyaline material, in longitudinal section, is seen lying along the side of the intima as two bands of varying density, each of which connects with the other by trabeculæ so forming a network in the lumen of the vessel. Within this network are many red corpuscles, obviously hyaline, and these at times clump together to form a homogeneous mass. The leucocytes also undergo hyaline degeneration. Their affinity for acid fuchsine is intensified, they lose their normal shape, become clumped into masses in which lie numerous granules deeply stained with hæmatoxylin, and at times arranged in a fashion suggestive of a horse-shoe. We regard these granules as the remains of degenerate leucocyte nuclei. There are many hyaline threads in the vessel lumen to which the leucocytes contribute frequently, forming a hyaline syncytium. Purely fibrinous thrombi are not infrequently observed.

We have previously observed these hyaline changes in our experiments upon the spinal cord. They are evidence of toxic action upon the blood elements. We find them also in man in cases of acute colitis, and their presence has been noted by others in measles, influenza, diphtheria, typhoid fever, malaria, pneumonia, and pyogenic infection. We have noted this type of vascular lesion also, and its effects, in the cervical enlargement of the cord in a case of cancer of the head of the pancreas. Here the resultant ischæmic softenings, situated in the posterior columns, had been followed by an acute ascending degeneration of the sensory fibres, which we traced, segment by segment, into the nucleus cuneatus and nucleus gracilis of the medulla. This observation in a clinical case, confirmed by our experiments upon the rabbit's brain, proves the *ante-mortem* genesis of the changes in the vessels.

Reference has been made already to the effects of disturbances of the circulation and of nutrition upon the nervous elements, and attention has been directed to the different character of the lesions in the cerebral cortex and the cornu ammonis. Before attempting an explanation of this difference we must in the first place look at some points in connection with the vascular supply of the brain.

A concise statement in reference to this subject will be found in an article on hæmorrhagic encephalitis by Bignami and Nazari (*Rivista Sperimentale di Freniatria*, vol. xlii, fasc. 1), in which many important points are mentioned with a direct bearing upon our research. These authors have found that the lesions in the white and grey matter in

hæmorrhagic encephalitis differ very materially, and their views regarding the cerebral circulation are based upon this. A sharp distinction is drawn between miliary hæmorrhages, which are characterised by their ring-like form around a necrotic focus and by their situation in the white matter, and the hæmorrhagic infiltration which follows thrombosis of the cerebral sinuses or meningeal veins. The hæmorrhage in this latter condition is extensive, affects the grey cortex, and decreases from without inwards. There are no necrotic foci surrounded by a ring of hæmorrhage, such as occur in the white matter. According to the opinion of the authors both conditions are caused by a local disturbance of the circulation and not by an inflammatory process. In the one case the thrombosis of the cerebral veins induces hæmorrhage in the cortex from stasis; in the other, blockage of a pre-capillary arteriole results in a circumscribed necrosis in the white matter followed by hæmorrhage in the immediately surrounding parts from the collateral vessels, the pathogenetic mechanism here being precisely the same as in infarction of other organs. If a similar lesion is not produced in the grey matter through occlusion of the arterioles it seems more than likely that there is some difference between the circulation in the cortex and the medullary substance. These observations incline the above-mentioned authors to the admission that although the pre-capillary arterioles in the white matter are physiologically terminal, those in the grey cortex are not so. In the white matter occlusion of an arteriole is followed by infarction; if this does not occur in the grey matter, evidently then we must admit the possibility of an anastomosis which is functionally adequate.

Many questions regarding the cerebral circulation are still only partially solved or remain obscure, but we are now in possession of certain facts which bear on the subject before us. All are agreed that the cortical arteries do not communicate with the basal arteries. Duret regards the cortical arteries as terminal, but Cordiat and Féré do not agree with this, although they grant that anastomosis is not sufficient to permit of re-establishment of the circulation when obstructed by thrombosis or embolus. Heubner supports the view that numerous anastomoses occur amongst the pial arteries, but that after their branches have penetrated the cortex anastomosis ceases. On this latter point he is supported by Duret and Beevor, who hold that the cortical arteries are terminal; but in spite of these definite statements, it would appear that the whole question is worthy of further study, since it has been shown that the myocardial arteries are not completely terminal in the anatomical sense as has hitherto been held.

Of great importance in the field of pathogenesis is a knowledge of the relationship between the short cortical and the long subcortical arterioles. Both are derived from pial arteries. The short are purely cortical, while the long pass straight down into the white matter, where

each supplies a very narrow territory owing to the small number of branches given off. Cortical arteries divide at once and very frequently, forming a fine capillary network which is richest in the deepest cortical lamina. Further, it seems that the short cortical arterioles anastomose in the depth of the grey matter with the long or medullary branches. The important point to be specially noted, however, at this stage of our knowledge is that the cortical vascular network is far richer than that of the white matter.

Whatever our present knowledge may be, from the anatomical side, of the ultimate distribution and connections of the cerebral vascular system, we seem to be justified in assuming from morbid lesions that there is a difference in the two systems which subserve the grey and white matter respectively. The evidence of this is seen in the histological difference between the cortical and subcortical lesions. The former are diffuse, and consist in necrosis of the nerve-cell units; the latter—in the cornu ammonis—involve a circumscribed locality and are typical of infarction. As the arterioles which supply the cortex and the adjacent subcortical zone have a common origin—the pial arteries—and both systems are affected by toxic hyaline thrombosis in these experiments, the difference in type of the resultant lesions must depend upon the anatomical arrangement of fine capillary branches. The definite restriction of the subcortical lesion with its patho-histological elements can only be interpreted as ischæmic in origin, and secondary to blockage of a terminal artery. But the pathogenetic mechanism of the diffuse coagulation necrosis of the cortical nerve-cells presents a more complex problem and is very far from clear. From the character of this lesion we can say definitely that no infarction has occurred, and therefore, the presumption might be advanced that cortical arterioles are not terminal. The highest elements, the individual nerve units, alone have suffered, and in a manner which points to interference with their nutrition; but the histological picture is far from what one associates with an ischæmia, and rather suggests a stasis due to blockage of veins, a deficiency of nutriment from narrowing of the lumen of arterioles and capillaries; or both combined, as is most probable. It is only some anatomical factor within the cortex itself which could explain this different type of lesion, and for the present one would be inclined to ascribe importance to the richness of the cortical vascular network which may counterbalance the effects of mechanical interference with the vascular supply. This seems to us the most reasonable view to take of a question which is still controversial, and stands in need of much special investigation.

In the above observations we have two types of lesion which illustrate how the two factors, degree and situation, can produce dissimilar pathological results, although the pathogenesis is the same; and if we apply

this to clinical neurology it becomes apparent that certain nervous syndromes, though widely different in symptomatology are pathogenetically one and the same disease. The difference in symptomatology is in large measure due to the anatomical site of the lesion, but the degree to which the nerve structures are involved is an equally important factor. These points are well illustrated by the implication of part of the pyramidal layer only of the cornu ammonis in two experiments, and a definite softening in its molecular layer in one other. Both varieties of morbid change are the result of blockage of vessels by hyaline thrombosis, and the picture to which this gives rise depends in the first place upon the calibre of the vessel implicated, and varies with the time which elapses between the onset of the lesion and its examination.

One of the practical applications of these experiments is that they throw light upon the genesis of the infantile cerebropathies, which are now regarded as the result of toxi-infections of medium or even slight intensity, contracted, as a rule, between the fifth and eighth month of foetal life, or more rarely in early infancy. Infantile cerebropathies vary in range from aberrations in type of gyri or sulci to absence of the corpus callosum—sometimes accompanied by absence of the fornix—and on to such gross lesions as porencephaly or even absence of one hemisphere. Evidence of antecedent inflammation and vessel occlusion are found in the brain with both naked-eye and microscopic examination, and the degree of interference with development, and the resulting mental deficiency, depend upon the extent of the lesion and the functional importance of the nervous tissues involved. Our later experiments can be closely correlated, therefore, with what is known at present of the pathogenesis of many forms of mental deficiency, and show how toxic hyaline thrombosis of capillaries or even larger vessels can contribute very largely in the production of nervous lesions of different degree.

The precise mechanism of production of these thromboses is still obscure. Whether they are produced directly by the toxins spreading along the vessel sheaths, or more indirectly through a general intoxication, must remain for the present open questions; and as all vascular phenomena are closely connected with the sympathetic mechanism, this must come under examination in future experiments.

Several arguments can be advanced in contradiction of the view that a general intoxication of the blood-stream is the sole pathogenetic factor in the causation of the thrombotic changes and of the lesions above described, and the most cogent is to be found in the distribution of the morbid changes, *viz.*: In the cortex of the brain, in the cornu ammonis, and amongst the white fibres round the periphery of the cord and the postero-median septum. This has been already referred to, and it has been pointed out that these changes lie precisely within the

area of the pial-vascular supply. There must be some significance in the fact that this portion of the vascular system of the brain and spinal cord is, so far as our present knowledge goes, alone connected with nerves from the sympathetic system. It is accepted that sympathetic nerves—grey fibres—leave the prevertebral ganglia to supply the meningeal vessels: they do not penetrate the nervous tissue however. This may be the explanation of the peculiar localisation of the nerve lesions under discussion; in any case it is a factor worthy of our consideration, especially when we remember that in the series of experiments in which the capsules were placed in the abdominal cavity we found inflammation of the prevertebral sympathetic ganglia, and primary degeneration of the spinal myelin in the area of pial vascular supply. The presumption would seem to be, therefore, that disturbance of sympathetic cell function can exert an effect on that portion of the cord whose vessels are under the control of the injured neurons; and it is reasonable to argue that in the experiments where the carotid sheath was infected a similar result in the brain would be obtained, as the carotid vessels are surrounded by a rich sympathetic plexus. As a matter of fact, we find both series of experiments entirely in agreement in this, that only the areas within the realm of pial supply show any morbid change of the nerve elements.

Evidence has been gradually converging towards the opinion that there is a much closer interaction between the central nervous system and the sympathetic chain than we have been accustomed to believe. These two systems have been regarded far too much as separate organs, anatomically and physiologically. But recent studies in comparative anatomy, embryology, and research in connection with the ductless glands and their influence upon the entire nervous system demonstrate clearly that the sympathetic chain of ganglia exerts a powerful, though subconscious, influence upon the higher nerve centres, and, in all probability, assists in controlling the mechanism of nutritive exchange there; while the higher centres on the other hand, exercise an action upon the lower or vegetative functions subserved by the sympathetic system. There is thus a constant interaction between the two; and hence further study of the symptomatology resulting from disturbance of the nervous mechanism must embrace both systems.

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- (2) ORR and ROWS.—“Lymphogenous Infection of the Central Nervous System,” *Brain*, 1914, vol. xxxvi, pts. iii and iv, p. 271.

(¹) This research has been carried on with the aid of a grant from the Lunacy Board of Control.

Epilepsy and the Ductless Glands. By GUY P. U. PRIOR, M.R.C.S.,
L.R.C.P., Medical Superintendent, Mental Hospital, Rydalmere;
and S. EVAN JONES, M.B., Medical Officer, Mental Hospital,
Callan Park, New South Wales.

THE actions of the ductless glands are very complex, and become greatly complicated when one of them is either under or over acting, because of its stimulating or inhibitory effect upon some other endocrine organ. To help in the difficulty of understanding their action, as an aid in diagnosing abnormalities in their secretion and in administering extracts of these glands, we drew up the following tables. So as to do no injustice to the authors upon whose works we have taken the liberty to base these tables, we should like to repeat that in many cases, the author to whom we attribute a statement, is himself frequently quoting someone else, and often does not support the view we have credited to him. It is only by reference to the original work that the author's meaning can be appreciated. Accepting as probably correct Gower's theory, that epilepsy is due to some chemical affecting the nerve-cells (1), and considering the great influence the endocrine glands have on chemical changes of the body, we have endeavoured to study these glands in their relation to epilepsy, and to discover if there is any evidence of their abnormal action in this disease.

EXPLANATION AND ABBREVIATIONS IN TABLES.

The statements as to the action of the glands have been taken from books or papers of various authors. In many cases the author to whom a statement is attributed is himself quoting some other authority, and does not of necessity support that statement. It is only by reference to the original work that the author's meaning can be fully appreciated.

The authority for any given remark is indicated by an initial, as :

S	= Schäfer, <i>The Endocrine Organs</i> .
B	= Bell, Blair, <i>The Sex Complex</i> .
P	= Paton, Noel, <i>Regulators of Metabolism</i> .
F	= Falta, <i>The Ductless Glandular Diseases</i> .
Sajous	= Sajous, paper in <i>Practitioner</i> , Feb., 1915.
L. Pr.	= Leopold-Levi, paper in <i>Practitioner</i> , Feb., 1915.
B. Pr.	= Bell, Blair, " " " "
W. Pr.	= Waller, H. E., " " " "
W. L. Pr.	= Williams, L., " " " Jan., 1915.
H. Pr.	= Hertoghe, E., " " " "
Herty, Pr.	= Herty, Pr., " " " "
E. Pr.	= Elliott, T. R., " " " "
V. Pr.	= Vincent, Swale " " " "
E1 & E2	= statement is to be found in <i>Endocrinology</i> , vol. 1 or vol. 2.
+	= increases.
-	= diminishes.
O	= ovarian.
T	= testicular.

Removal.	Remarks.
<p>Death in two to five days. S.</p> <p>Of whole anterior lobe; death; of posterior lobe no symptoms. B.</p> <p>Of part of anterior lobe = dystrophia adiposa genitis. B.</p> <p>—</p>	<p>Cushing assumes hypophysial insufficiency in cases in which increase of temperature occurs after injection of 2 c.c. of 5 per cent. extract of anterior lobe. F.</p> <p>—</p>
<p>Death in from a few days to a few weeks. S.</p> <p>—</p>	<p>The nucleus of the thyroid is the seat of the development of tetany.</p> <p>Tetany is induced by the injection of sodium chloride removing calcium from the ionised condition. Its action in controlling activity of the centres may be diminished.</p>

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Remarks.

Thymectomised hens lay eggs without shells.

Thymus is rich in nucleinates, its lymphoid cells containing a nucleo-protein rich in phosphorus.

The function of the thymus is to supply through the lymphocytes the excess of phosphorus in organic combination or nucleins which the body, particularly the osseous and nervous systems, require during development and growth. Sajous.

Atrophy of thymus is hastened by breeding from young animals, and is delayed by castration. W. Pr

Thymus is absent in mentally weak children; implantation of thymus in thymectomised animals causes resumption of growth. Sajous.

Adrenalin secretion, which, after absorbing oxygen from pulmonary air and being taken up by the red corpuscles, supplies the whole organism, including the blood, with its oxygen. Sajous.

The cortex is the seat of manufacture of the lipoids of the body, and may be related to the formation of myelin. S.

Adrenalin normally in the blood plays no part in maintaining the tone of blood-vessels. P.

Adrenalin produces same effect as stimulation of sympathetic nerve. S.

Stimulation of splanchnics raises blood-pressure; but not if suprarenal vessels are ligatured.

Adrenalin destroys toxic waste of muscular origin and reduces fatigue. Sajous.

It is dangerous to give adrenalin while under the influence of chloroform. E. Pr.

Epileptiform convulsions may occur after removal of the thyroid parathyroid system (2), in extreme cases of Addison's disease (3), in hypopituitarism (4); also in cases with minus parathyroid action, as when associated with tetany (9). In two young epileptics, who died suddenly, we found considerable enlargement of the thymus gland and small heart and aorta; in both these cases the aorta would only admit one finger, and in both these cases the suprarenal glands microscopically showed a large extent of vacuolation. These cases, in their mode of death and in their *post-mortem* findings, much resemble status lymphaticus.

Is there usually, in epilepsy, any change in the ductless glandular system, and can treatment with these glands in any way influence the disease for better or worse? We think that we can show that both these questions can be answered in the affirmative.

Pituitary.

Schafer says that in conditions of hypopituitarism a tendency to epilepsy has occasionally been described (4). Several authors have recorded cases of epilepsy making great improvement with anterior pituitary extract. Spears (5) relates a case of a man, æt. 28, an epileptic since 6 years of age, with an average of three or four fits weekly, who, after four months' treatment with anterior pituitary, had no fit, and has continued without for eight months. Tucker (6) records a number of cases that improved with the same treatment; and Joughin (7) the case of a girl, æt. 16, who improved within two weeks of taking anterior pituitary extract, and has been without major seizures for two years. This case was clinically one of hypopituitarism.

G. C. Johnston (8) claims that there are often changes about the pituitary in cases of epilepsy unattended by gross evidence of pituitary disorder, and advises the use of radiography in these cases. We have under our care eighty male epileptics, of whom four are clinically unmistakable cases of hypopituitarism. They all have abundance of adipose tissue, and have no hair on the body except pubic hair, two have no hair in the axilla, and the other very little. Three have but a scanty amount of hair on the face, one case has rather an abundant beard. All four have large mammary glands. They all have a low blood-pressure, their highest record being 115 mm. Hg., which was reached once in one case in the recumbent position; the majority of their blood-pressure readings were higher lying down than standing.

Although these cases, from their general appearance and clinical signs, may be taken to be typically apituitary, the improvement they have made on treatment with whole gland pituitary has been but slight. We have used the whole gland pituitary in preference to the

anterior gland, as one case in which we used this latter was so much worse while taking this that we had to discontinue the treatment, when improvement immediately followed.

At the time of treating these cases we were unaware of the success that others had obtained with the anterior gland, and intend to give this a more extended trial.

Case 43, without any medicinal treatment, has an average of 7 fits a month, varying from 2 to 14. For four months he was taking pituitary extract, gr. $2\frac{1}{2}$ t.i.d.; for these months he averaged 10 fits a month, ranging from 8 to 14.

Case 8 has been treated over a longer period; without treatment for a period of twelve months he averaged 13 attacks monthly, ranging from 7 to 15; for four months he was taking pituitary extract, for which time he averaged 10 fits a month, being a slight reduction from his former average. For a second period of four months, he received calcium chloride, gr. x, every four hours, with a resulting average of 10 fits monthly. For three months he has been taking potass. brom., g. vii 4 tis horis, with an average of 5 fits a month. This patient appears to have received slight benefit from pituitary gland, but to have received more from bromide.

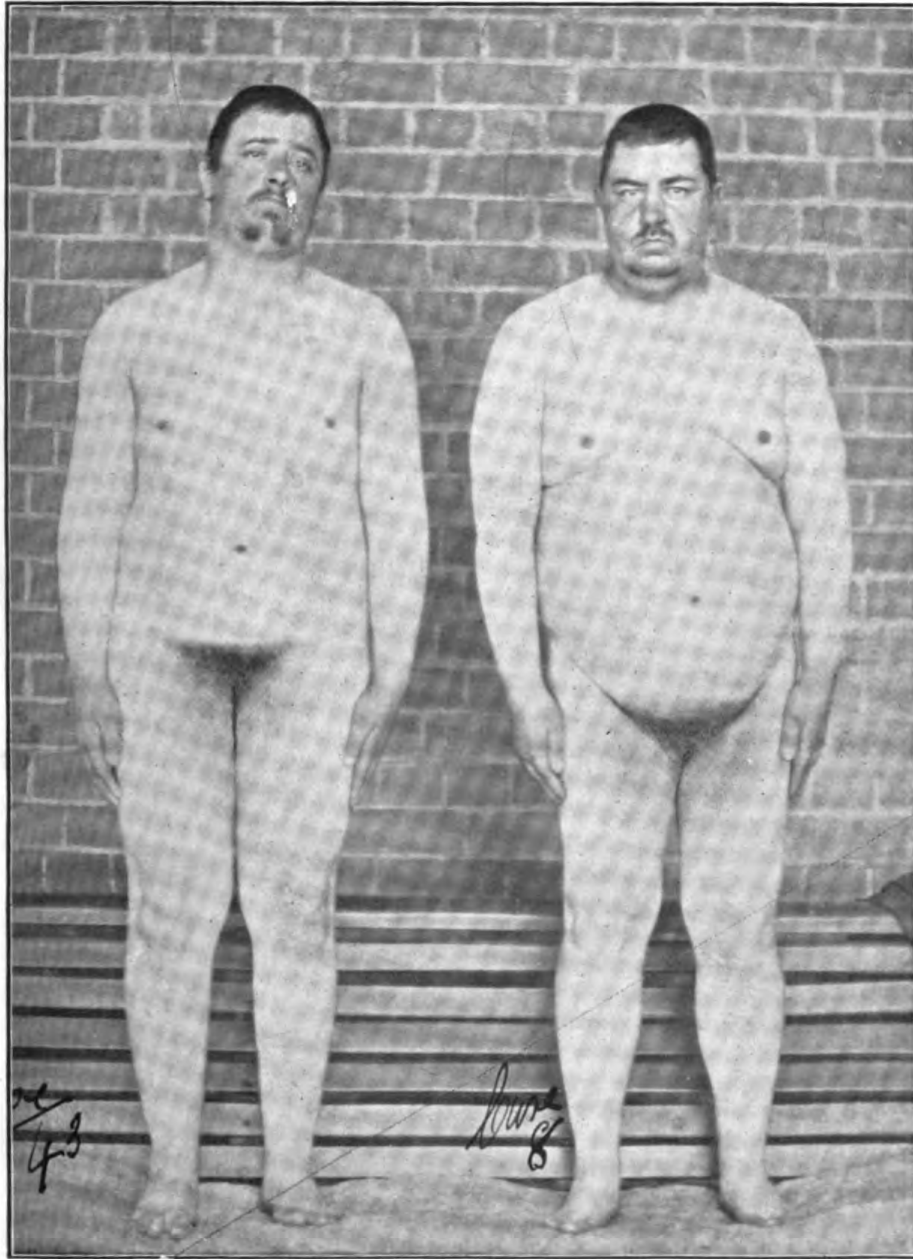
CASE 38.—For nine months, while being treated with pot. brom., gr. xx t.i.d., averages 18 attacks a month; for two months he takes pituitary gland in addition to the bromide, when the average rises to 22 monthly. With suprarenal gland for three months in place of the pituitary, the average number of attacks monthly drops to 18. For three months didymine, gr. xv, daily is given, and the average rises to 20.

If, in any way, the epileptic attacks in this type of patient are directly associated with or due to insufficient pituitary action, an increased number of fits is to be expected with didymine, as the gonads are stated to inhibit the action of pituitary (10).

Parathyroid.

Falta (9) states that epileptic attacks in tetany are not rare, and that Redlich collected seventy-two cases where these diseases have been associated. He also states that in parathyroprivic individuals unilateral or bilateral epileptiform convulsions with loss of consciousness have been observed. Blair Bell (2) says that animals from which he removed both the thyroid and parathyroid glands died of convulsions. Know (11) records cases of epilepsy which improved with parathyroid and calcium lactate. One of our cases on admission presented many signs that might be accounted for by parathyroid insufficiency.

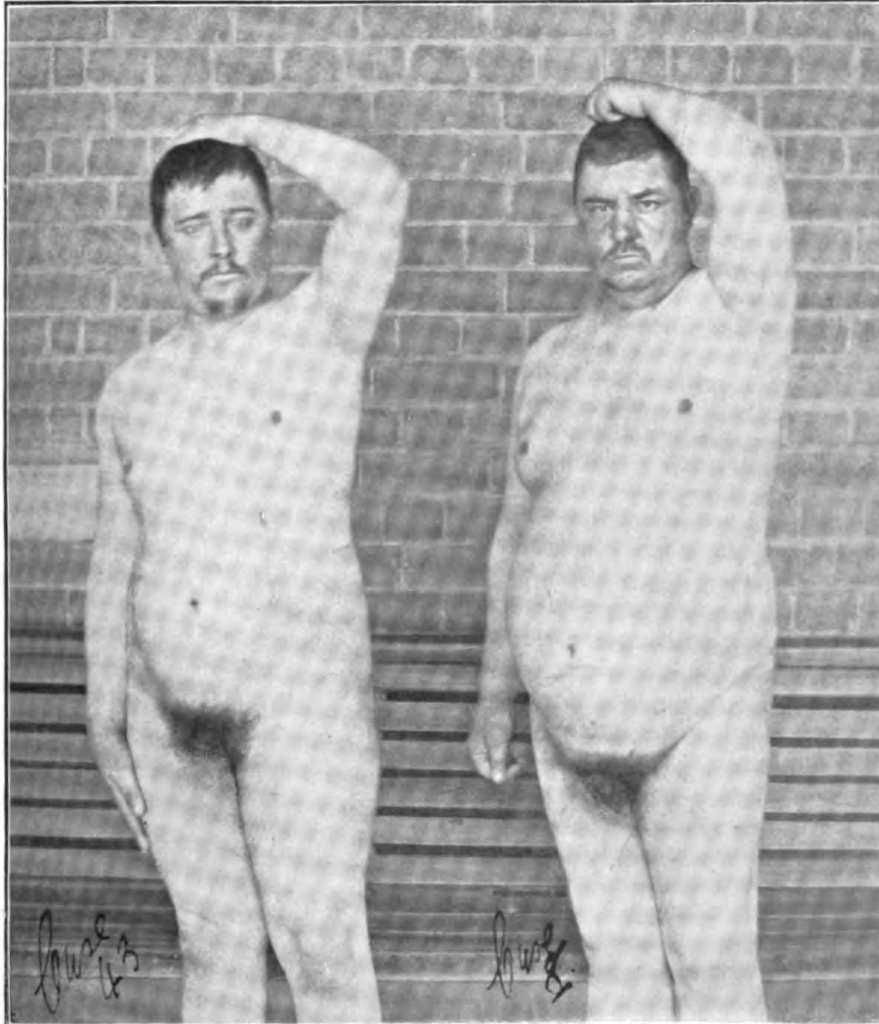
CASE 39.—A male, æt. 21, had an insane inheritance, and had suffered from epilepsy since he was two years old.



Pituitary.

To illustrate paper by Drs. PRIOR and JONES.

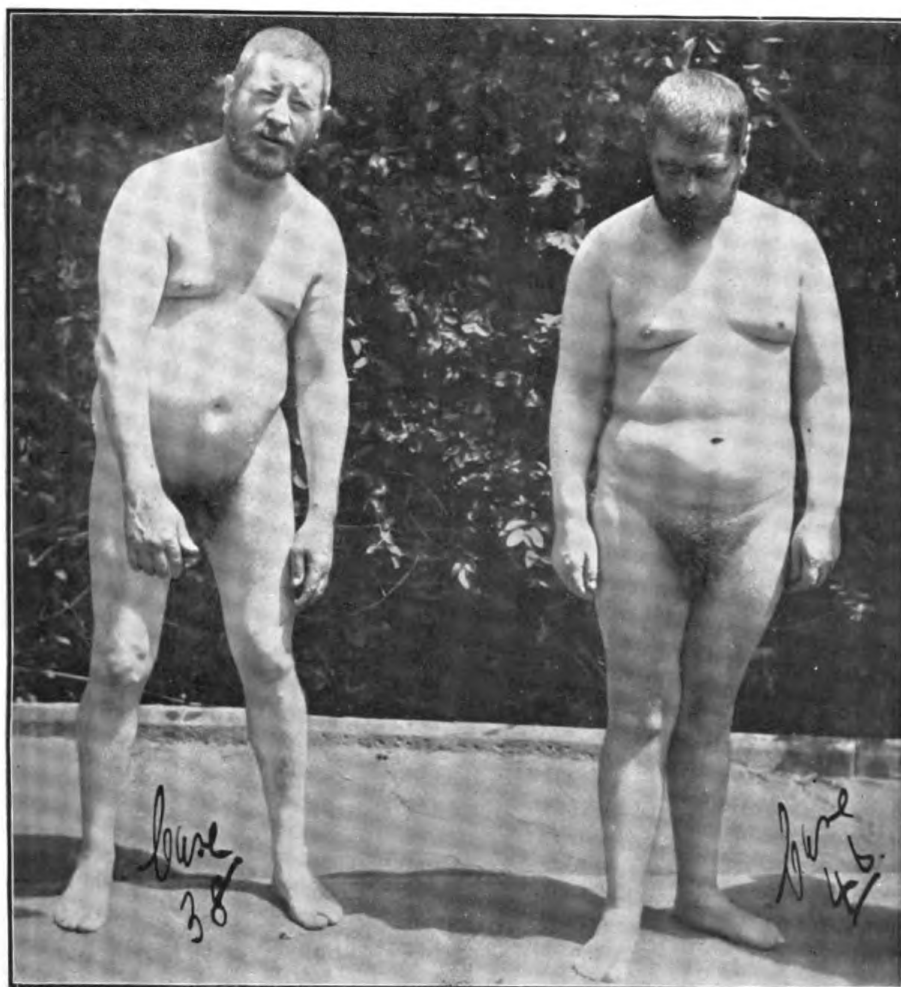
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Apituitary.

To illustrate paper by Drs. PRIOR and JONES.

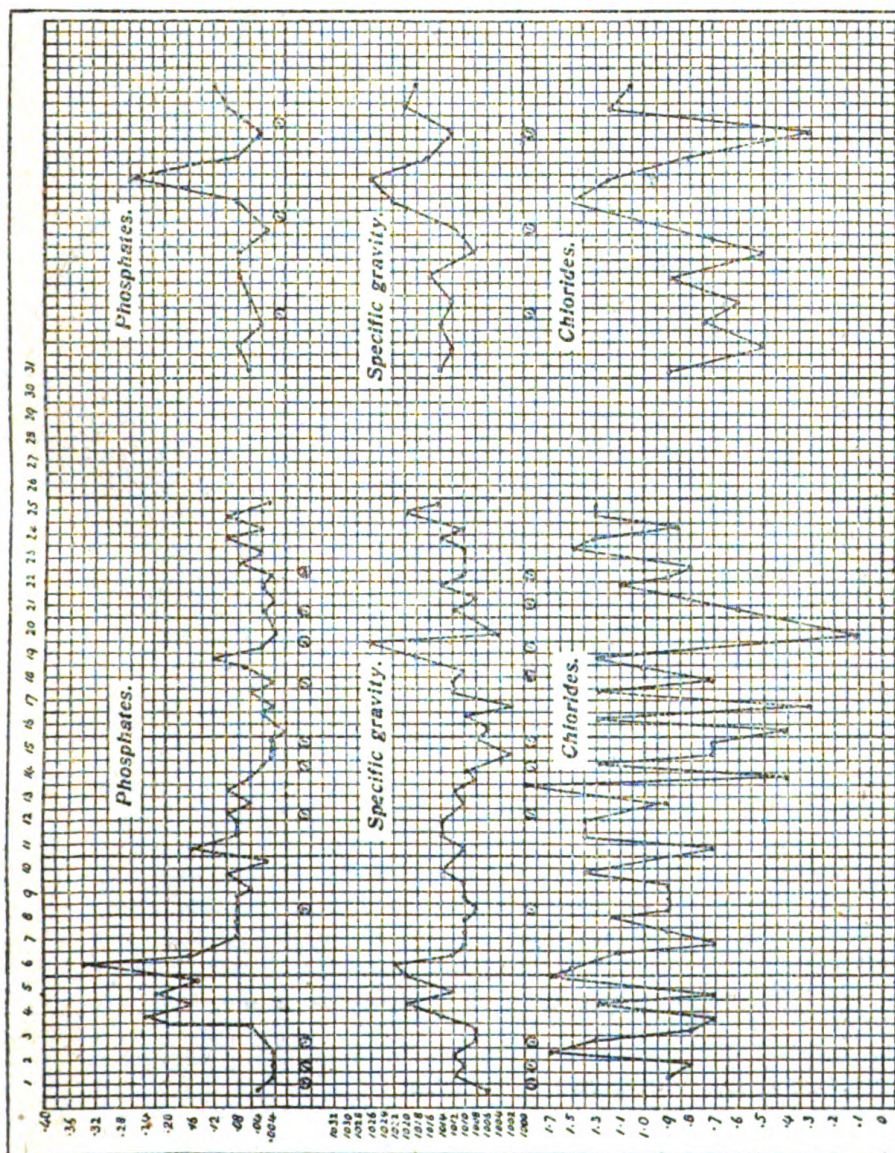
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Apituitary.

To illustrate paper by Drs. PRIOR and JONES.

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Charts showing the specific gravity and the amount of phosphates and chlorides in grammes *per cent.* in 12-hourly in Case No. 26, and in 24-hourly in Case No. 18, specimens of urine and their relations to epileptic attacks.
Fits thus O. Equivalents in form of tremors thus —.

On admission he was extremely thin and wasted, of light build, and with small bones, saliva flowed from his mouth in one constant stream, his teeth were carious, nails badly developed, he had but little appetite, mentally he was dull and tearful, all reflexes were so greatly exaggerated, together with tremor of tongue and facial muscles and inco-ordination of speech, that it was at first thought that he was an advanced infantile general paralytic. By referring to the table on parathyroid action it will be seen that most of this boy's symptoms are consistent with under-action of this gland. His mother stated that for many months previous to admission he had been having more than 100 fits a month while taking bromides. During the first month under our observation, while having no treatment, he had 102 fits. He was for one month given a mixture of calcium lactate and potassium bromide and his fits fell to 30 for the month. For six months he took parathyroid gland, gr. 1-10 daily, he put on weight, ceased to salivate, the reflexes became normal, and after two months of treatment he was sufficiently well to work at gardening. During the fifth month he became very dull, with unsteady gait and almost cessation of the epileptic attacks, having for this month only 6 fits. His blood-pressure was at this time very low, varying from 85 to 105 mm. Hg.; because of this low blood-pressure, and because it is stated that parathyroid action is antagonistic to suprarenal, he was given for six weeks suprarenal gland extract instead of parathyroid, and the bromide and calcium were suspended. He improved in physical health, his blood-pressure rose, and the monthly average of his fits rose to 43. For the next three months he was again given parathyroid gland and the mixture of calcium and bromide. For this period he remains well, physically and mentally, and resumes his work and averages 14 attacks a month.

Another case of similar type and build and with exaggerated reflexes we have treated in the same way.

This patient, Case 40, has been an epileptic since 10 months of age, and is now *æ*t. 26. A record of his attacks has been kept by his mother for several years. She states that for four months previous to admission he had averaged 18 fits a month while being treated; for two years previous to this he had averaged 10 attacks monthly. For the first month after admission, without treatment, he had 10 fits. For seven months he had been treated with parathyroid gland together with bromide and calcium chloride, with an average of 3 fits monthly, ranging from 1 to 4. Before being treated he was subject to attacks of irritability and violence, which were the reason of his being admitted. He has since had no trouble in this way, but is, in fact, a quiet and trusted worker.

Case 7 is another case that has made considerable improvement on parathyroid gland.

He had been an epileptic since 15 years of age. He was dull and lethargic, the sort of case that, apart from epilepsy, often improves on thyroid gland. This patient, without treatment, averaged 20 fits a month; treated for nine months with calcium and bromide alone or in combination, together with thyroid or thymus glands, he averaged

24 fits a month ; treated for five months with parathyroid gland and calcium and bromide he averaged 10 fits a month.

Thymus.

In a former article (12) we stated that thymus gland was the one we had found most useful, and the only one from which apparent harm had not in some case or other occurred. After a more prolonged use we have seen in one or two cases more epileptic attacks taking place while this gland was being used and an immediate fall on its discontinuance. We believe that it has a distinct use in epilepsy. To form a clear idea as to what might be taken for thymus insufficiency is not easy, but there are several reasons why thymus might be expected to be useful in this disease.

(1) Epilepsy more commonly commences at the time of life that the thymus becomes functionless.

(2) It causes a retention of calcium (13), and in cases of thymus insufficiency there is an excessive excretion of this salt (14).

(3) It prevents an excessive accumulation of acids in the body, especially phosphoric acid (16). Epileptic attacks can be increased by giving this acid to patients (17). It has been shown by Pugh (18), and confirmed by ourselves, that the blood of epileptics is less alkaline than normal, and at the time of taking a fit this becomes more accentuated.

(4) The thymus is stated to be absent in the mentally deficient children (15); the majority of epileptics whose attacks commence in early life are mentally deficient.

In thymus insufficiency there is increased action of the thyroid (19), suprarenals (20), and gonads (21). Thyroid and suprarenals will in some epileptics increase the number of attacks, but in many others suprarenal seems decidedly beneficial. Many epileptic patients show an increased sexual irritability at the time of taking fits, this irritability we think can be lessened by giving thymus gland.

In our series of nineteen *post-mortem* examinations all but six showed microscopically some signs of persistence and activity of the thymus gland. In Cases 48 and 49 the thymus was of extreme size ; in both the thymus was about as large as the palm of the hand. Both were cases of sudden death in young and apparently healthy subjects, death in each case, for want of a better reason and with hardly sufficient justification, being attributed to suffocation while in a fit. In Case 50, also one of sudden death, in which there was no question of suffocation, as the patient, who was thought to be in his usual health, had a fit while an attendant was beside him, and died immediately afterwards, while on his back. This man had a large and very vascular thymus, he was an alcoholic, æt. 37, and his first epileptic attack had occurred five years before. Might not the enlargement of his thymus be a com-

pensatory one, to combat the chemical changes that alter the calcium metabolism in epilepsy or which lessen the alkalinity of the blood? It is said by Blair Bell that this gland will enlarge after removal of the ovaries (22), and it is said to persist in eunuchs (23).

CASE 6.—For twelve months while taking bromides, had an average of 16 attacks monthly; for sixteen months has been taking thymus gr. x daily, in addition to calcium and bromide, for which time he averaged 8 fits a month.

CASE 37.—A lad, who, without treatment for eleven months, averaged 6 fits a month. His epileptic attacks are preceded by much sexual irritability. For the first month on thymus gland he had no fit, a thing that had not been recorded against him before; for the first three months on this treatment he averaged $1\frac{2}{3}$ attacks a month, and during this time the sexual irritability was much less. For nine months on thymus gland he has averaged 4 fits a month. Whether the apparent wearing-off of effect is due to the action of the thymus in inhibiting or stimulating some other gland, it is difficult to say.

In Case 3 it appears as if a change in the glandular treatment is helpful. This patient on bromide averaged about 100 attacks monthly; after three months' treatment with calcium, bromide, and suprarenal gland, the average falls to 9; in the third month he has only 2 attacks. In another period of treatment, after the patient returns from leave of absence, when the number of attacks return to their former average, during the third month on suprarenal extract, he has 2 or 3 attacks daily, which immediately fall to about 2 weekly when thymus replaces the suprarenal gland.

CASE 28.—For seven months without treatment, averages 18 attacks a month; on calcium lactate for three months averages 10; with calcium, bromide, and thymus for five months the average is 7 a month.

Suprarenals.

Of the suprarenal glands from fourteen epileptics examined microscopically eleven showed considerable vacuolation of the cortex. After removal of these glands, death is preceded by convulsions (36).

Epilepsy may be associated with Addison's disease (3), and the suprarenals play an important part in the calcium metabolism. From these facts, it might be expected that suprarenal extract would be of use in epilepsy.

We have been much interested in seeing a reference to the work of Cotton, Carson-White, and Stevenson (25), who, by the aid of Abderhalden reaction, concluded that at least one type of epilepsy may be produced by over-action of these glands. They lessened the activity of the adrenals by giving pancreatin, and with good results. It is stated by Waller (37) that in cases of pneumonia the suprarenals are profoundly affected. We have under our care a chronic case, who was an epileptic, and who, about sixteen years ago, had an attack of lobar

pneumonia and has not had a fit since; we have also read of one similar case, in which epilepsy ceased after an attack of acute pneumonia. We have seen 2 or 3 epileptic attacks occurring daily during the course of a double pneumonia. Is it not possible that the first two cases were of the kind in which there is over-action of this gland, which the attack of pneumonia might have reduced? We think we can show that in some cases suprarenal extract is of benefit to the epileptic patient.

Case 20 was for twelve months taking bromide, with an average of 41 fits monthly. With calcium chloride combined with bromide for nine months the average is reduced to 13 a month. For two months he receives suprarenal extract in addition, with a resulting monthly average of 10 fits. This patient has since died of pneumonia, and the result of the microscopic examination of his glands is given below, where it will be seen that his suprarenals had undergone fibrotic changes.

CASE 20.—For five months without treatment averages 33 fits a month. On bromide for three months and on bromide combined with calcium for five months, averages 28 attacks a month. On the latter treatment, together with suprarenal gr. x daily for eight months, averages 17 attacks a month.

Cases 30 and 23 have improved on suprarenal, the latter having without treatment for six months an average of 21 attacks monthly, with calcium and suprarenal extract and without bromide for three months, this average is reduced to 7. Case 30, having an average without treatment of 15 attacks a month, with calcium and bromide for eight months, an average of 9, which for the next five months is reduced to a monthly average of 4, when suprarenal gland is added. With the exception of Case 30, which is one of alcoholic origin, occurring late in life, they are all young patients, of poor physical development and with low blood-pressure. Suprarenal gland in Case 39, already referred to as having improved under parathyroid, seemed to increase the number of attacks, but while on the gland the patient made considerable physical improvement.

Thyroid.

It is said by Falta (38), that the thyroid is intimately associated with the control of the central nervous system, and that "this is instanced in the association of epilepsy with thyroid disease, especially exophthalmic goitre." He also records a case of epileptiform convulsions occurring for the first time while the patient was taking large doses of thyroid extract (39).

Murray Auer (40), quoting from Bolton, says, "Genuine epilepsy is a chronic auto-intoxication arising through metabolic processes in which, as a result of hypofunction of the thyroid and parathyroid glands, the poisons are not thoroughly neutralised or removed." Auer confutes the statement. Thyroid is also stated to be harmful in epilepsy, as by its action the excretion of calcium is increased. In one case of

myxœdema we have seen epileptiform convulsions occurring shortly before death. We have seen epileptic cases made worse by the use of thyroid gland.

CASE 34.—A girl who never excreted more than a trace of calcium in her urine, was given thyroid extract gr. v. daily for four months, the average number of her fits remained almost unaltered. Without treatment for six months, the monthly average was 4, while taking thyroid it was 3 a month; for three months she received calcium chloride as well as the thyroid extract, for which time the monthly average was the same as on thyroid alone.

CASE 9.—In this case thyroid was apparently of slight use. This patient, on bromide for twelve months, averaged 14 fits a month; for seven months while taking thyroid gland as well as bromide, the average was 10 attacks a month; for seven months on calcium chloride and thyroid, but without bromide, the average was 11 a month.

CASE 23.—Referred to as having improved with suprarenal extract, was for one month on thyroid gland, during which month she had the greatest number of fits ever recorded against her, *viz.*, 34, which fell immediately the gland was discontinued.

Gonads.

In our series of *post-mortem* examinations the female patients have shown more constant changes in these glands than the male patients. The ovaries for the most part were found fibrotic with atrophy of the interstitial cells; in one case the testicle showed atrophy of the corresponding cells.

Menstruation in most epileptics is irregular. Of forty of our cases in whom the function was established, and upon whom note had been kept as to their catamenia for twelve months, in only three did the periods recur twelve times during the year. Eighteen of the total number menstruated six times or less in the twelve months, and eight of these only once. In only two cases was the period at all prolonged or the loss excessive, and in these two only occasionally.

This irregularity and slight loss might point to deficient ovarian action (26). In thyroid (27) or anterior pituitary (28) deficiency there may be absence of, or irregular menstruation, also when there is a deficiency of calcium in the system (29). The epileptic attacks are very apt to occur at about the time of the period, probably due to the increased amount of calcium excreted at these times. Contrary to what might have been expected, we do not find the average number of fits much greater in the months in which there is menstruation than in those in which there is amenorrhœa, but in the former the fits are mostly grouped around the period. One of the female patients at times shows pronounced erotic tendencies, but this is not especially associated with the fits or menses. The epileptic attacks in three male patients

are directly associated with symptoms of sexual activity, two are sexually perverted, and in several sexual irritability is a common symptom, but we think that perverted or excessive sexual manifestations are not commoner in epileptics than in other insane patients.

We have used didymin extract in cases with high blood-pressure, acting upon the dictum of Ludlum and Corsin-White (30), that Brown-Sequard fluid is useful in a somewhat similar type of cases of primary dementia. We have also used didymin or ovarian extract in cases that habitually excrete but little calcium in the urine ; with didymin we have increased the amount of calcium excreted, but cannot say that in these cases the epileptic attacks have been diminished, nor have we observed cases improve on ovarian extract.

CASE 19.—One with a high blood-pressure and an average of 35 fits a month while taking bromide, and 32 a month while taking calcium and bromide ; for six months has didymin gr. xv. daily in addition, for which time he averages 17 attacks a month.

REPORT OF MICROSCOPICAL EXAMINATION OF ENDOCRINE GLANDS.

CASE 2.—L—, died October 9th, 1916, æt. 26. Pneumonia.

Testis.—Tubular epithelial cells show mitotic figures. Large numbers of interstitial cells which contain yellow granular pigment.

Thyroid.—Colloid vesicles large. Epithelium very much flattened. Colloid neutrophil.

Pituitary: Pars anterior.—Eosinophil cells greatly predominate. *Pars intermedia*: No colloid vesicles. *Pars posterior*: Very few hyaline bodies. Some intermedia cells are seen invading this portion.

Pineal.—Alveolar arrangement well shown. A large area shows degenerative changes like area of softening in brain.

Thymus.—Not examined.

Suprarenal.—Capsule much thickened. Cells stain well and show no degenerative changes.

Pancreas.—Very few islets are seen, and these show degenerative changes, staining poorly and apparently disorganised.

CASE 20.—W. S. L. W—, died June 20th, 1916, æt. 28. Suddenly.

Testicle.—The tubular cells are actively proliferating and mitotic figures are seen. Groups of interstitial cells are present here and there, but appear to be deficient.

Thyroid.—The vesicles vary in size, and are filled with eosinophil colloid. The epithelium is cubical. There is an increase of interstitial cells.

Pituitary.—This organ was extremely small, and was evidently missed when the sections were being cut.

Thymus.—This consists of fatty tissue with islets of thymus tissue here and there. These are acutely congested.

Suprarenal.—The cytoplasm of the cortical cells has a reticular appearance. The medullary cells appear granular. There are several round cell masses in the medulla.

Liver.—Shows congestion, fatty degeneration, and cloudy swelling.

Pancreas.—Exhibits cloudy swelling. The islets appear normal.

CASE 58.—C. C—, died November 26th, æt. 50. Pneumonia.

Testicle.—The tubules are normal, and the usual interstitial cells are present, and contain yellow pigment.

Thyroid.—The vesicles are very large, and the lining epithelium is flattened. There are no interstitial changes.

Pituitary.—*Anterior lobe*: Is much larger than usual, the cells are mostly eosinophil. *Pars intermedia*: There are no colloid vesicles. *Pars posterior*: Is small, there are no hyaline bodies or invading cells.

Suprarenal.—The cortical cells stain well and show very slight degenerative changes. The medulla is normal, and the cells contain much pigment.

Thymus.—Apparently of persistent infantile type, with large masses of gland tissue. Hassall's corpuscles are in evidence.

Liver.—Normal.

Spleen.—The capsule is thickened, and arterioles show thickening of their walls.

CASE 56.—J. T—, died June 1st, 1916, æt. 28. Status. Onset of fits at 17.

Testicle.—Not examined.

Thyroid.—Vesicles of uniform size, lining epithelium flattened. There is an increase of interstitial fibrous tissue.

Pituitary.—Not examined.

Thymus.—Not examined.

Suprarenal.—The *cortical* cells stain very poorly, some show finely granular cytoplasm, but in most the cytoplasm does not stain at all, except as a network of fine threads. The *medulla* does not show these changes, and the cells contain much pigment, either fine yellow granules on large dark brown particles.

Liver.—Exhibits cloudy swelling.

CASE 57.—G. J. D—, died April 4th, 1916, æt. 51. Convulsions.

Testis.—Not examined.

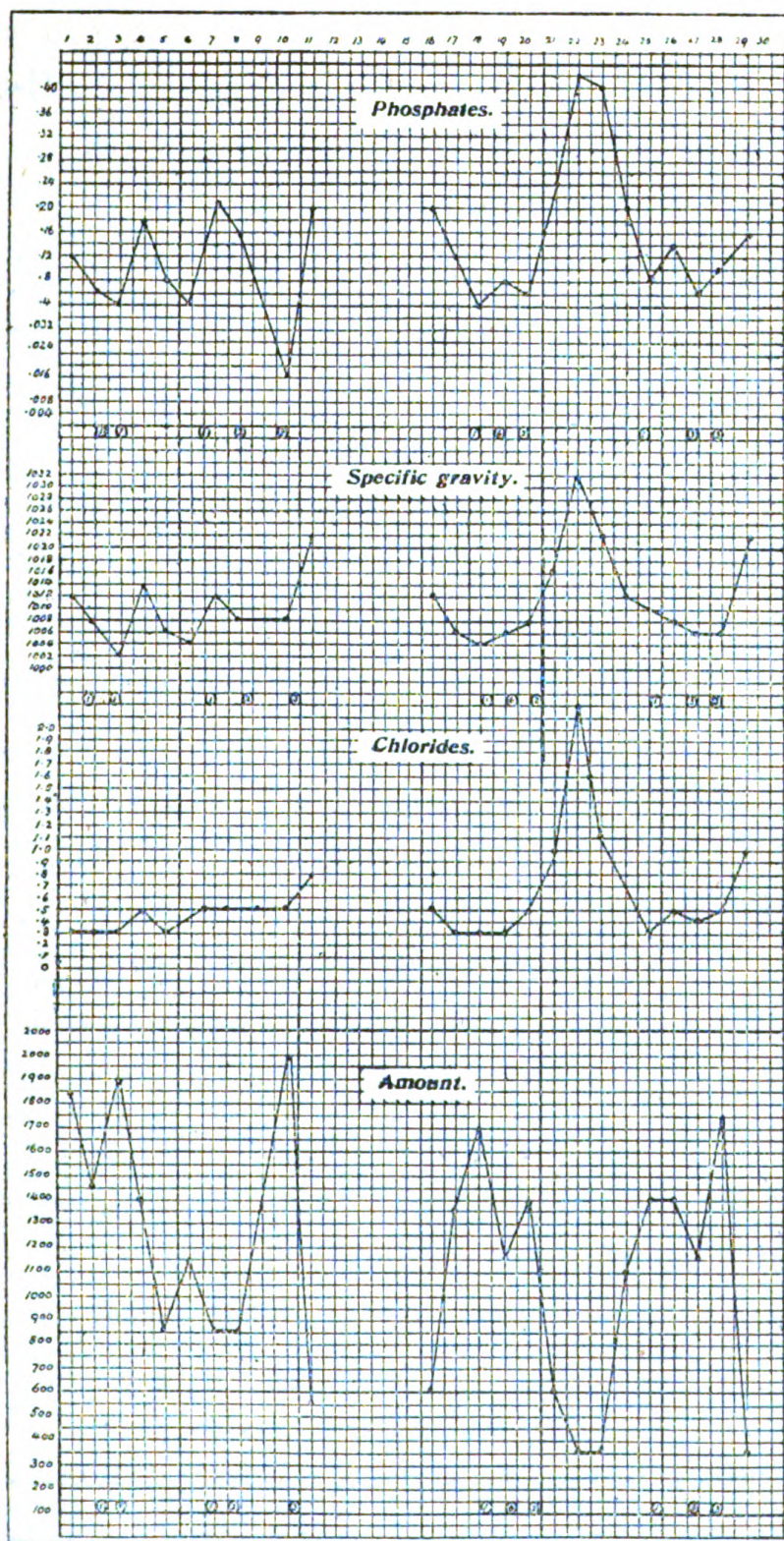
Thyroid.—The vesicular epithelium is cubical, in places the cells appear to be proliferating. There is also a great increase of the interstitial cellular elements.

Pituitary.—*Pars anterior*: Eosinophil cells predominate. *Pars intermedia*: There is a large colloid vesicle, the lining cells are degenerating. *Pars neurosa*: Contains a few hyaline bodies. There are no invading cells. The whole organ is acutely congested.

Thymus.—There are scattered foci of lymphoid tissue in which an occasional corpuscle may be seen. It is noticeable that the blood-vessels are large in proportion to the amount of gland tissue. The gland is probably of regenerative type.

Suprarenal.—The cortical shells show advanced degenerative changes. Everywhere the cytoplasm fails to stain, except as a network of fine fibrils. The medullary cells appear normal and contain pigment.

Liver.—Shows early fatty degeneration and chronic venous congestion.



CASE No. 44.

CASE No. 60.

Charts showing amount of urine passed, its specific gravity, the amount of phosphates and chlorides in grammes *per cent.* in 24-hourly specimens, and their relations to epileptic attacks.

Fits thus O. Equivalents in form of tremors thus —.

CASE 55.—G. W—, died, æt. 73. Epileptiform convulsions.

Testicle.—Not sectioned.

Thyroid.—Vesicles large, epithelium flattened. Very few interstitial cells.

Pituitary.—*Pars anterior*: Cells mostly basophil. There are many small vesicles enclosed by cubical epithelium, some of which contain homogeneous neutrophil colloid. Many cells show vacuoles in their cytoplasm. *Pars intermedia*: There are several very large colloid vesicles containing neutrophil colloid. *Pars posterior*: Neuroglia network less dense than usual. Contains hyaloid bodies and pigment granules. No invading cells from *pars intermedia*.

Thymus.—Not examined.

Suprarenal.—This organ is very large. The *cortex* shows an extremely advanced stage of degeneration; the nuclei stain well, but the cytoplasm appears as a network of fine threads with large spaces. Some cells show less advanced changes, and in these the cytoplasm is markedly granular. The *medulla* is affected to a less extent and some parts stain well.

Liver.—Chronic venous congestion. Early fatty degeneration of cells of zones of hepatic vein.

CASE 54.—M. E. H—, died November 27th, 1916, æt. 39. Bronchopneumonia following status.

Ovary.—This organ consists of more or less cellular fibrous tissue in which are a few corpora fibrosa. The blood-vessels are surrounded by very thick fibrous walls. The cortical zone is less cellular than the central portion. No follicles are seen.

Thyroid.—The vesicles are of medium size, and are more or less uniform and filled with eosinophil colloid, except in some instances where the epithelium has proliferated and filled the vesicle. There is a slight degree of interstitial fibrosis and multiplication of interstitial cells. The vesicular epithelium is cubical.

Pituitary.—*Anterior lobe*: Eosinophil cells predominate, with here and there nests of basophils. There are numbers of vesicles containing eosinophil colloid. Many cells contain large blood pigment granules. *Pars intermedia*: There are several vesicles containing eosinophil colloid. The lining epithelium is very much flattened. *Pars posterior*: There are very few hyaline bodies. No pigment granules and no invading cells are to be seen.

Thymus.—Not examined.

Suprarenal.—The *cortex* shows a slight degree of degenerative change. In many cells clear spaces having appearance of vacuoles are seen. The *medullary* cells contain much blood pigment, and in some are found homogeneous eosinophil globules.

Liver.—Shows early fatty degeneration and infiltration.

CASE 53.—S. J. M—, died May 25th, 1916, æt. 57. Exhaustion after series. Fits began at 16.

Ovary.—This organ is small and intensely sclerosed. The subcapsular layer consists of interlacing bundles of spindle cells, whilst the centre of the organ is occupied by large, faintly-staining masses of fibrous tissue with a few septa represented by fibroblasts (hyaloid

bodies). The blood-vessels are surrounded by immensely thickened fibrous walls. There is no evidence of follicular tissue.

Thyroid.—The colloid vesicles are mostly small and separated by proliferated cellular tissue. The vesicular epithelium is cubical.

Pituitary.—*Pars anterior*: In subcapsular regions eosinophil cells predominate and vessels are distended; the central cells are chromophobe with a few basophils. *Pars intermedia*: There are a number of small colloid vesicles. A few eosinophil cells are seen passing towards the *pars nervosa*. *Pars posterior*: A number of eosinophil hyaline bodies are seen in the meshes, and yellow pigment granules are also present in considerable numbers.

Thymus.—Not sectioned. Probably not found *post-mortem*.

Suprarenal.—This is firmly attached to the kidney with only the fibrous renal capsule between the two organs, though in places this is absent and renal tubules and columns of suprarenal cells are seen intermixed. In some places in the suprarenal tissue small spaces lined by cubical epithelium are found; some are filled with a homogeneous neutrophil substance whilst others are empty. These, perhaps, represent aberrant renal tubules. The suprarenal cells stain well except in one part, where in the subcapsular region degenerative changes are in evidence.

Spleen.—Capsule is thickened and there is vascular sclerosis and waxy degeneration.

Liver.—Shows an advanced stage of fatty infiltration.

CASE 51.—H. D—, died October 7th, 1916. Status epilepticus; æt. 50. Has had fits since two years of age.

Ovary.—Shows extreme degree of fibrosis. There are several large corpora fibrosa, and no Graafian follicles can be seen.

Thyroid.—Not examined.

Pituitary.—*Pars anterior*: Chromophobes predominate. *Pars intermedia*: There are no colloid vesicles. *Pars posterior*: This portion is more cellular than usual, but no hyaline bodies or invading intermedia cells are visible.

Pineal.—There are numerous small particles of lime.

Thymus.—There are numerous islets of true thymus tissue containing Hassall's corpuscles, scattered amongst fatty areolar tissue. The type is regenerative.

Pancreas.—The alveolar cells are normal, but there are very few islets of Langerhaus.

Spleen.—The vessels are sclerosed. There are small hæmorrhages in evidence.

Suprarenal.—The cortical walls show a moderate degree of degeneration; the medullary cells contain much pigment.

CASE 52.—M. M—, died June 15th, 1916, æt. 50. Lymphadenoma.

Ovary, thyroid, and pituitary.—Not sectioned.

Thymus.—Vascular gland tissue is present, containing many Hassall's corpuscles. The type is probably regenerative.

Suprarenal.—*Post-mortem* changes present—shrinkage of cortical columns and cloudy swelling of cells.

Spleen.—Interstitial fibrosis; large amount of granular pigment; chronic venous congestion.

Liver.—Shows an extreme degree of fatty infiltration.

CASE 50.—C. H. B—, died August 12th, 1916, æt. 40. Suddenly, in a fit. Fits commenced at 34.

Testis.—Not examined.

Thyroid.—The vesicles are small and irregular and do not contain much colloid; the lining epithelium is cubical and appears to be actively proliferating, so that in places there are masses of cells. The intermedial tissue is increased. The blood-vessels are congested.

Parathyroid.—This is attached to the above section and is 3 mm. in length by 2 mm. in breadth. Apparently it shows no abnormality.

Pituitary.—*Pars anterior*: Eosinophil cells in excess. *Pars intermedia*: No colloid. Apparently there is an extensive effusion (of lymph), which in parts has a fibrillar structure, whilst in others it is granular; in it a few red cells may be seen, but no vessels or fibroblasts. In places cells of *pars intermedia* appear to be forming a layer. *Pars posterior*: Large numbers of darkly-staining intermedia cells are streaming out into this portion. Masses of pigment granules are to be seen in some numbers—the appearances suggest that they are derived from the invading cells.

Thymus.—Represented by numerous small collections of lymphoid cells in fatty areolar tissue. Hassall's corpuscles are present. The gland tissue is very vascular, the capillaries being large and thin-walled. The type is regenerative.

Suprarenal.—The cortical cells exhibit degenerative changes—though the nuclei show up well the cytoplasm appears merely as a network or has a granular or vacuolar appearance. The cells of medulla stain well, but even amongst these the cytoplasm has a vascular appearance.

CASE 31.—W. S—, died suddenly November 1st, 1916, æt. 25. Aorta small. Thymus very large. Onset of fits at 15.

Ovary.—This organ consists of fibro-cellular tissue, which in places is extremely vascular. Only one small follicle is seen in the section.

Thyroid and pituitary.—Not examined. *Pineal*.—Normal.

Thymus.—This is apparently of retrogressive infantile type. The thymus tissue contains numerous Hassall's corpuscles; there are also lime particles.

Suprarenal.—Appears normal.

Pancreas.—Cells are shrunken. Very few islets seen.

Spleen.—Shows numerous small hæmorrhages.

CASE 48.—C. E. P—, died August 11th, 1916, suddenly, æt. 22. Fits commenced at 15.

Testis.—Apparently normal. Interstitial cells are present.

Thyroid and pituitary.—Not examined.

Thymus.—This is a large organ of persistent infantile type. There is much gland tissue with numerous Hassall's corpuscles. The blood-vessels are large and thick-walled.

Suprarenal.—Both cortex and medulla show degenerative changes.

Pineal.—Contains some particles of "sand," otherwise normal.

CASE 21.—C. A. R.—, died February 27th, 1916. Status. Æt. 41. Fits since 2 years of age.

Ovary.—This organ is small, and consists almost entirely of cellular fibrous tissue. Only one small Graafian follicle is seen. There are several corpora fibrosa, some in the early stage of formation being comparatively cellular and containing spiral capillaries. The arterioles have thick walls, while the capillaries are very large and thin-walled.

Thyroid.—The alveolar spaces are large and the lining epithelium moderately flattened. In places there are masses of proliferated interstitial cells.

Pituitary.—*Pars anterior*: Cells are shrunken and are mostly chromophobe, though there are considerable numbers of eosinophils.



CASE 21.—Epileptic. Showing vacuolation of cortical cells of suprarenal body. High power. Camera lucida sketch.

Pars intermedia: There is one vesicle lined with cubical epithelium and containing basophil colloid. Within another space lined with cubical cells is seen a mass of pink-staining material broken up by numerous round cells. About some of these cells are more or less clear spaces having a faint reticular appearance. *Pars posterior*: There are no invading cells. A few hyaline bodies are seen.

Thymus.—There are numerous foci of gland tissue with many Hassall's corpuscles.

Suprarenal.—Both cortical and medullary cells show poorly-staining cytoplasm; the change is more marked in the former.

Liver.—Shows advanced fatty degeneration.

Pancreas.—The acinar structure in parts is lost, so that the gland has the appearance of an adenoma. The islets of Langerhans stain faintly, and in the cell nuclei mitotic figures may be seen.

RÉSUMÉ OF CHANGES FOUND IN THE ENDOCRINE GLANDS.

Gonads.—Constant changes of the nature of obliterative fibrose are present in the female, but there are no corresponding changes in the male.

Ovary.—The ovaries were examined in five of the six female patients. Microscopically they appeared shrunken and atrophic. Histological examination revealed constant and advanced changes. In all cases the organ was extremely fibrosed, the stroma being made up of fibro-cellular elements whose appearance resembled that in a fibroma. In areas the cellular elements had almost completely disappeared and the tissue stained faintly—these are the so-called corpora fibrosa. In two instances small Graafian follicles were seen, but were absent in the others. The arterioles were surrounded by relatively very thick fibrous coats, while the capillaries were thin-walled and large. These changes must be taken to indicate a great deficiency in the activity of the ovaries.

Testis.—Of the eight males the gonads were examined in four, and in only one of these was a definite pathological change evident; this was in "W" 20, a case of dystrophia adiposa genitalis, whose testis showed a deficiency of interstitial cells.

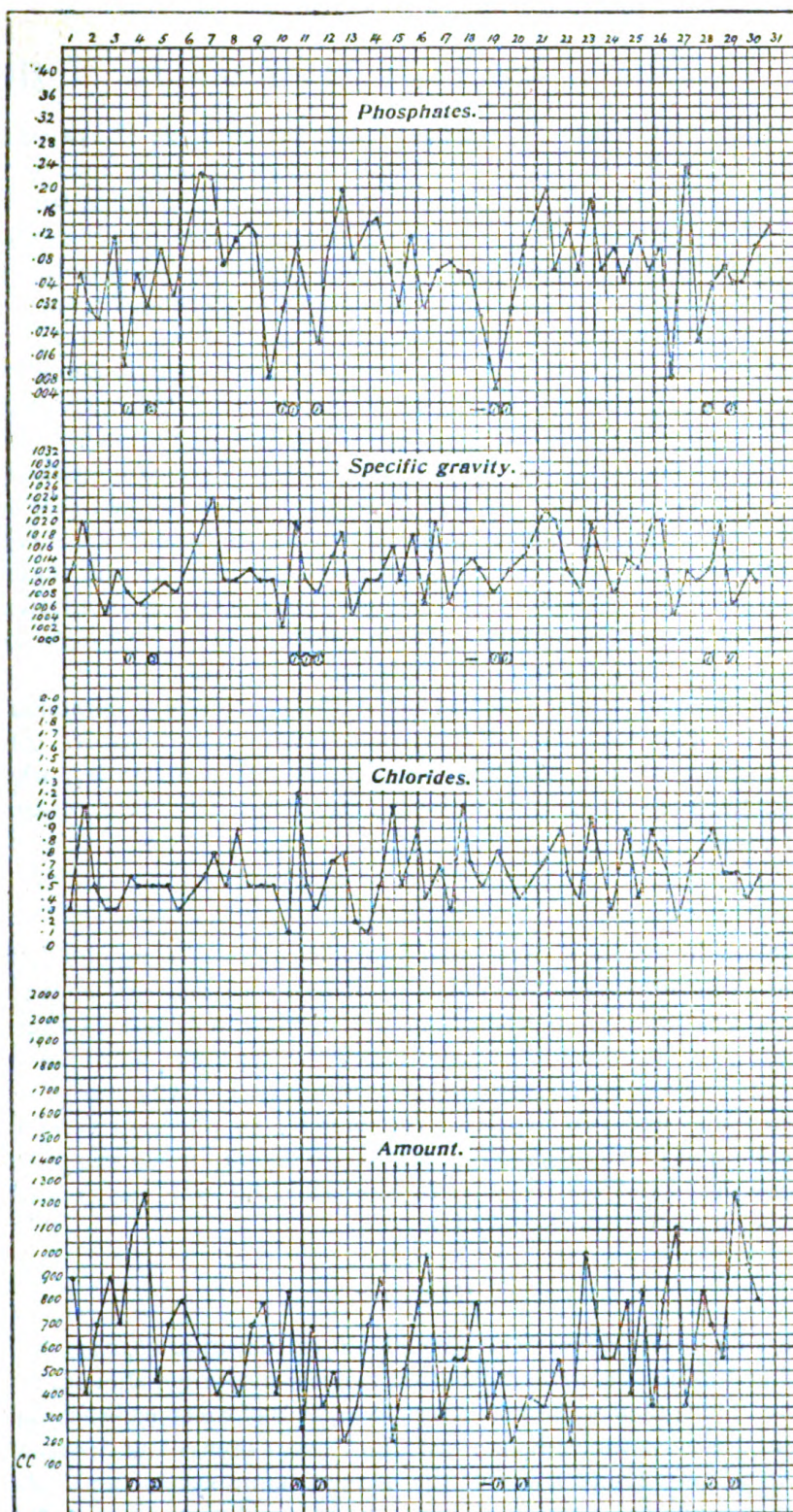
Thyroid Gland.—Two types were recognised on histological examination. In one the vesicles were large and lined by flattened epithelium, whilst interstitial cells are few in number. In the other the vesicles were relatively small and lined by cubical epithelium which appeared to be proliferating, and there were large numbers and masses of interstitial cells. From the resemblance to the appearances seen in the thyroid in exophthalmic 'goitre, the latter type may be considered to represent an active phase, whilst the other represents a quiescent state. Of the eight males, the thyroid was not examined in one case; of the other seven, four were classified as quiescent and three as active. Of the six females the thyroid was examined in three, in two it was of active type, in one it was of quiescent type.

Parathyroid.

The gland was not specially examined, but in one case 50 "B" (20) in which it was cut with the thyroid, no pathological changes were evident.

Pituitary.—No constant changes were found, although there were frequently seen indications that suggested that the gland was over active in some cases.

Thymus.—The thymus was present in five out of eight males and in four out of six females. In some cases it was as large as the palm of the hand, whilst in others it was only recognised on section of the



CASE No. 59.—Chart showing amount of urine passed, its specific gravity, the amount of phosphates and chlorides in grammes *per cent.* in 12-hourly specimens, and their relations to epileptic attacks. Fits thus O. Equivalents in form of tremors thus —.

mediastinal fatty tissue. Two types were recognised: (1) The persistent infantile type has the macroscopic and microscopic appearance of the infantile thymus; this was present in two males and three females. (2) The regenerative type—in this the thymus tissue was recognised microscopically, and appeared in islets of true thymus tissue embedded in fat—this was the case in three males and one female. In all cases the glands were extremely vascular.

Suprarenals.—Almost constant changes were found in the gland. The cortical cells failed to stain at all well; usually the nuclei stood out well, but the cytoplasm was coarsely granular or represented by a fine network enclosing clear spaces. It is difficult to determine whether the change is degenerative or merely exhaustive, but the fact that it is most advanced in cases that have died of status points to the latter conclusion. The medulla, as a rule, shows the change but slightly. In one series the granularity of the cortex was present in an advanced degree in six males and one female, moderately in one male and three females, and absent in one male and two females.

Pancreas.—In several cases in which the pancreas was examined it was found that the islets of Langerhaus were few in number. In a further series of five epileptics, three males and two females, whose endocrine glands have been recently examined, the following changes were found.

Gonads.

Testes.—In two cases there were fibrotic changes affecting chiefly the basement membranes of the tubules. *Ovaries:* In one case advanced fibrosis was present, in the other the ovaries were not examined. *Thyroid:* In one male and two females the type was active, in two quiescent. *Pituitary:* Changes indicating unusual activity were present in two males and two females. *Suprarenal:* In all cases there was vacuolation of the cortex. *Thymus:* Active thymus tissue was present in three males and one female; in one male the type was persistent infantile, in the others regenerative.

Chemistry.

We, in a former paper (31), pointed out the chemical changes in the blood and urine that we had observed to occur before and after epileptic attacks. Since then we have in a certain number of cases made examinations of the urine twelve-hourly instead of every twenty-four hours, and have in this way found some of the changes more accentuated. In a twenty-four-hourly specimen of urine the pre- and post-epileptic effects often become confused. We have also in one case examined the blood twice daily, and in this way found the changes before a fit more pro-

nounced. To repeat, shortly, the changes we formerly stated or have since found to occur are :

In the urine, before a fit or series : An increase in the calcium excreted ; a fall in the amount of phosphates excreted ; a fall in the amount of chlorides excreted. The calcium change varies in different patients, some habitually excrete little or none, and in these no change is observed. The change in the phosphates and chlorides, more especially the former, is, with an occasional exception, constant.

In the blood, before a fit or series : A fall in the degree of alkalinity ; a fall in the leucocyte count. The coagulation time, which we formerly thought was shortened before a fit, we have since seen in some cases lengthened, and in other cases the change is so variable as to be no guide. The calcium blood index was also variable, sometimes being high and sometimes low.

After a fit or series there is in the urine : An increase in the amount of phosphates excreted, which in some cases greatly exceed the inter-fit interval amount ; there is also a rise in the amount of chlorides excreted, but this is not so marked or so consistent, and occurs earlier than the phosphatic rise.

In the blood after an attack there is found : An increase in the number of leucocytes ; a shortening of the coagulation time ; a rise in the degree of alkalinity ; a rise in the calcium blood index.

We have also noted in many cases previous to an attack that there is an increase in the amount of urine passed, which in some cases habitually amounts to from 100 to 130 oz. per diem, falling during a series or after an attack to from 10 to 15 oz., this last being of much higher specific gravity than the former. We claim that by examinations of the urine twice daily and daily examinations of the blood, we can, in the majority of cases, foretell an epileptic attack, in some cases a day or two before, in others only a few hours before.

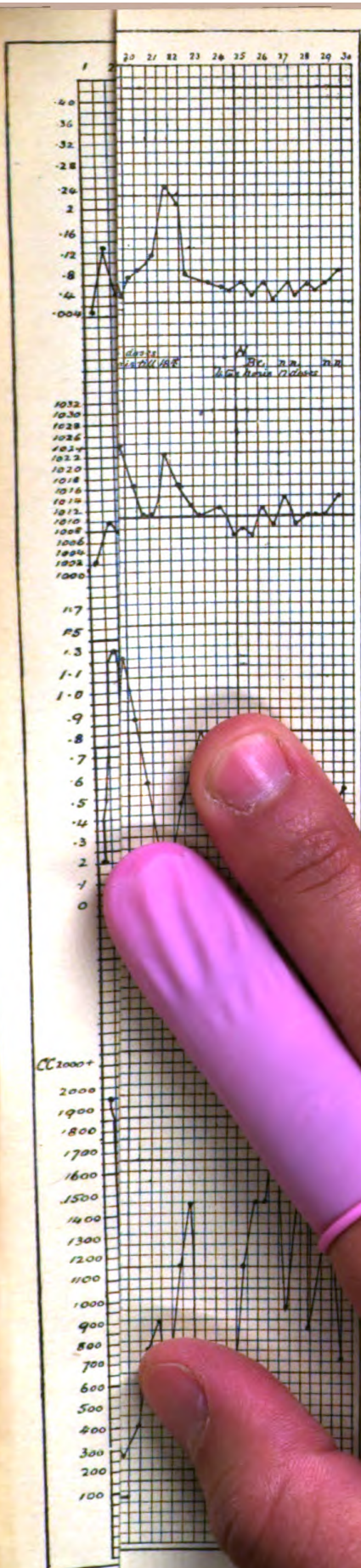
The indications we find of greatest use, and subject to fewer exceptions than the others, are the change in the percentage of the phosphates and chlorides excreted, and the change in the leucocyte count ; the other indications we have named are useful confirmatory points but are subject to more variation ; all these are subject to much alteration by other influences than the epileptic attacks.

We believe that in many cases before an attack there is an increase in the amount of calcium excreted, in all a diminished amount of phosphates excreted, with generally a fall in the amount of chlorides. Can these changes in any way directly or indirectly be connected with the epileptic attack ? We think they can. It is stated that calcium is for the most part excreted as calcium phosphate, that phosphorus is mostly excreted as the sodium or calcium salt, and that the chlorides are mostly excreted as sodium chloride. There being an increase in the

calcium excreted, together with a fall in the phosphates and chlorides, we think this might be taken to show that there is a retention of sodium. Sabbatani (32) has stated that the surface of the brain is rendered more excitable by the application of sodium, and less excitable by the application of calcium salts. Substances that precipitate calcium heighten the excitability of nerve (33). Falta states that common salt given to children suffering from tetany brings about full anodal hyperexcitability (34). Epileptics are known to improve on a restricted salt diet, but has the benefit that follows a saltless diet been attributed to the right cause?

In some cases before an attack there is a lengthening of the coagulation time, which may mean a diminished amount of fixed calcium. In female epileptics attacks are commonest at the time of the menstrual period, when the coagulation time is lengthened and there is an increased loss of calcium. We think that these changes all point to a lessening of the calcium in the tissues and a retention of sodium, and that the bad effects of sodium chloride on epileptics may be due rather to the sodium than the chloride. Both the amount of calcium and phosphorus excreted by the urine are greatly influenced by food and drugs, e.g. magnesium sulphate will increase the amount of calcium eliminated by the bowel and diminish that passed by the urine, lime will diminish the amount of phosphorus passed in the urine and increase that passed by the bowel (35). Until the fæces have been examined daily as to the quantity of these salts excreted, and the relation of the amount to that lost by the urine and to the epileptic attack, it is not possible to state the effect of these salts on the disease. We have endeavoured to abort attacks that we have foretold, by increasing the phosphates excreted, by creating a leucocytosis and increasing the calcium blood index and shortening the coagulation time, but so far with only partial success. Nuclein will cause a leucocytosis, and it is stated that it will cause an increase in the amount of phosphates excreted. Calcium injected subcutaneously will cause a shortening in the coagulation time and an increase in the calcium blood index; it is said to diminish the amount of phosphates excreted by the urine and to increase the amount eliminated by the bowel. We have often observed after its use a high leucocytosis. We used nuclein, thinking that its action might be similar to that of thymus extract, with the additional advantage that it can be subcutaneously injected.

CASE 35.—A female patient, to whom we gave injections of nuclein every third day, had previously averaged 20 fits a month; for the first month on this treatment she had no fit; at no time before had her record been less than 11 attacks a month. During the second month of this treatment her average returned to its former level. We discontinued the treatment for several months, after which interval we gave her nuclein *per os* every alternate three days. For the first month,



epileptic attack
nuclein from 1 to

while taking this, she had 8 attacks, all at the time of her menstrual period, being her lowest record with the above exception. The constitutional effects of the fits were less than usual. For two more months this treatment was continued, but without benefit, except that the after-results of the attacks were rather less.

We have given injections of nuclein in a few isolated cases, when the patients have told us that they were about to have an attack and the attack has not taken place. It is impossible to draw any conclusions from these results, but they are suggestive, and the action of this drug in epilepsy is worthy of study. If our idea as to sodium retention is correct, it is possible that nuclein might do good by promoting the excretion of sodium phosphate, and the leucocytosis that it causes may help to ward off the attack.

Case 45 is the one in which we have tried nuclein most freely, and is the case in which we have continually endeavoured to abort attacks. This is a case of great interest, and is worth some remarks, we having made daily, or twice daily, observations on him for nine months. He came under our care in October, 1916, with but little as to his past history and only six months of his fits, which varied from 4 to 20, giving an average of $8\frac{1}{2}$ attacks a month. He is a happy, good-natured imbecile, æt. 35, and said to have been an epileptic since childhood. Preceding a fit, for from a few to twenty-four hours, he has intense general clonic-muscular spasms, during which he is quite conscious, will talk rationally, and attend to his wants. It is while in these attacks that he will have the typical *haut mal* fits, the clonic spasms afterwards easing down for about half an hour, when they will return and continue if not treated for from thirty-six to forty-eight hours, ceasing gradually. These attacks will, if not interfered with, recur with fair regularity about every ten days; if postponed by treatment the tendency is to recur at a shorter interval. We have charted the observations made upon this patient, and we think have prevented the *haut mal* attacks by treatment at the time we expected them to occur, but have not been so successful with the accompanying attacks of spasms; but we think we have at times postponed them, and have lessened their severity. It will be seen, by reference to the chart, that this case shows a decided fall in the phosphatic excretion before an attack and a marked rise afterwards, that the quantity of urine excreted rises greatly at the time of the attack and falls after. There is a pre-fit fall and a post-fit rise in the chlorides excreted. The calcium excretion in this case is always low, seldom more than a trace, and is not sufficient to bear any direct relationship to the attacks. His blood changes for the most part are such as we have stated to occur.

Epitome of Treatment.

Case No.	Treatment.	Gland.	Number of months.	Monthly average no. of hts.
2	K. Br.	<i>Nil</i>	12	41
	Ca. Cl. et Br.	<i>Nil</i>	9	13
	<i>Idem</i>	Suprarenal	2	10
3	<i>Nil</i>	<i>Nil</i>	51	110
	Ca. et Br.	Suprarenal	3	9
	<i>Idem</i>	Thymus	3	48
6	K. Br.	<i>Nil</i>	12	16
	Ca. et Br.	Thymus	16	8
	K. Br.	<i>Nil</i>	12	27
5	Ca. et Br.	<i>Nil</i>	4	15
	<i>Idem</i>	Thymus	9	14
	<i>Nil</i>	<i>Nil</i>	3	20
7	Various treatment	—	9	24
	Ca. et Br.	Parathyroid	5	12
	K. Br.	<i>Nil</i>	4	35
19	Ca. et Br.	<i>Nil</i>	3	30
	Ca.	Didymin	3	25
	Ca.	Pituitary	2	33
20	Ca. et Br.	Didymin	6	17
	<i>Nil</i>	<i>Nil</i>	5	33
	Ca. et Br.	<i>Nil</i>	5	28
39	K. Br.	<i>Nil</i>	12	22
	<i>Idem</i>	Suprarenal	6	17
	<i>Nil</i>	<i>Nil</i>	6	100
40	Ca. et Br.	<i>Nil</i>	1	30
	Ca. et Br.	Parathyroid	8	17
	<i>Idem</i>	Suprarenal	2	38
22	K. Br.	<i>Nil</i>	12	10
	Ca. et Br.	Parathyroid	10	3
	<i>Nil</i>	<i>Nil</i>	5	18
23	K. Br.	<i>Nil</i>	4	13
	K. Br.	Parathyroid	3	18
	Ca. et Br.	Parathyroid	5	9
24	<i>Nil</i>	<i>Nil</i>	6	21
	Ca.	Thyroid	1	34
	Ca. et Br.	Suprarenal	3	12
28	<i>Idem</i>	Thymus	4	8
	Ca.	Suprarenal	3	7
	Ca. et Br.	<i>Nil</i>	4	3
29	<i>Nil</i>	<i>Nil</i>	6	9
	Ca. et Br.	<i>Nil</i>	6	3
	<i>Idem</i>	Thymus	4	2
30	<i>Nil</i>	<i>Nil</i>	7	18
	Ca.	<i>Nil</i>	3	10
	Ca. et Br.	Thyroid et Thymus	4	9
29	<i>Idem</i>	Thymus	5	7
	<i>Nil</i>	<i>Nil</i>	7	10
	Ca. et Br.	<i>Nil</i>	4	10
30	<i>Idem</i>	Thymus	13	7
	<i>Nil</i>	<i>Nil</i>	4	15
	Ca. et Br.	<i>Nil</i>	8	9
30	<i>Idem</i>	Suprarenal	5	4

CONCLUSIONS.

Among statements and results which are apparently absolutely contradictory and opposed, is it possible to co-relate these more than confused actions?

We have seen that epileptiform convulsions, according to various authorities, may occur with apituitary, hypo- and hyper-thyroid, hypo- and hyper-suprarenal and aparathyroid conditions. All these glands play an important part in the calcium metabolism. In apituitary, hyperthyroid, hyposuprarenal, and aparathyroid affections, there is an increased loss of calcium from the tissues. If this salt has the influence that we think in the causation of epilepsy, this may be found to be the common ground upon which all these glands act. In over-action of the suprarenals there is a calcium retention, which makes it difficult to explain how an over- and an under-action of this gland can both cause convulsions. If an over-action of the suprarenals should be a factor in the causation of the phenomena it may be through these glands that the thyroid, pituitary, and parathyroid act, as thyroid secretion stimulates the suprarenals to action, and the cortex of the suprarenals hypertrophies in apituitarism, and there is an ill-understood relationship between the parathyroids and the suprarenals. The subject is full of difficulties, and probably not at present capable of explanation. That the ductless glands have some part in the production of epilepsy, and that their extracts may be beneficial in this disease, we think is proved. But, except in cases of apituitarism and marked cases of aparathyroidism, it is not possible to give definite indications as to which gland will be useful in any given case. One can only be led by general glandular symptomatology.

Our thanks are due to Dr. Oliver Latham for kindly preparing, and cutting of, and advising as to the sections; and to Mr. R. C. Dent for much help in forming the tables upon the action of the glands.

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Mutism in the Soldier and its Treatment. By COLIN McDOWALL, M.D., late Capt. (Temp.), R.A.M.C., Ticehurst House, Ticehurst.

MANY varieties of functional disturbance are found in men enlisted for the present war, and not the least interesting is mutism. In a hospital set apart for the treatment of nervous disorders many cases of complete loss of speech are met with, and these may be divided conveniently into three main categories as follows: Mutism arising in the field, in hospital, and previous to participation in active service.

Loss of speech occurring in the field is nearly always due to close proximity to the explosion of a shell or mine. The man is frequently blown into the air or knocked over and buried, but this is not always the case. Men have described to me how one shell after another fell near them in rapid succession, and though not close enough to inflict any physical injury, yet the mental effect was so great as to produce a state of complete helplessness and subsequent loss of voice through fear. The men can tell when a shell is near them by the sound produced as it travels through the air, and some have described the sensation of being thrown up by a shell explosion. One patient, a warrant officer, said that he felt as if he was being distended with air. On the other hand, many can give no details of any kind. It would appear that the main effect of shell explosions in one's immediate neighbourhood is to produce a highly emotional state. It is not to be wondered at that men under heavy shell fire experience many emotions. They know only too well what a shell can do, for they have seen what shells have done, and they can judge to a certain extent if a shell is about to fall near them. They cannot say how near, but the uncertainty, danger, and noise put what they call "the wind up them." That is the soldier's expression for an emotional state characterised by fear.

It is not so easy to prove how great a part emotion plays in the production of mutism in those cases in which a man is violently thrown into the air or is knocked over by concussion. The actual explosion lasts only a minute fraction of a second, but the mental effect, if the victim retains his consciousness, must be intense. That he has no recollection of the explosion in no way disproves that he was momentarily conscious of it. On admission, at any rate, these subjects of mutism exhibit many signs of extreme emotion due to terror—tremor often generalised, rapid breathing, marked corrugations of the forehead, and a restless, shiftier manner. There is another type of case in which dulness, apathy, and depression are the leading features, and this type is most frequently observed when deafness is a superadded symptom. These cases are of such frequent occurrence that they will be referred to again.

At a home hospital it is almost impossible to obtain reliable histories with details of the onset of the patient's trouble, and men are only too ready to attribute their condition to shell-shock, though subsequent inquiry may fail to furnish any evidence. My belief is that mutism, as seen in soldiers, is due to various causes, but all of an emotional character, and once a condition of speechlessness has been produced this state is prolonged by the inability of the man to overcome an inhibition, and thus regain the control of a voluntary mechanism which he does not understand. In most instances ignorance, and in many indifference, prolongs the trouble.

The symptoms accompanying mutism are not invariable, but, the

point of most importance is the condition of the respiratory apparatus. Frequently a case cannot hold his breath for more than twelve or fifteen seconds. The respirations are rapid and shallow. The man is unable to take a deep breath, and he cannot blow out a match a yard away. The volume of breath on powerful exertion is only poor. Such is the condition in a typical case, and it does not appear to matter how long he has been ill, as cases of six or seven months' duration have exhibited the same respiratory signs. This description, however, needs some qualifications. If a man is on the point of recovery his respiratory troubles are by no means so marked, and in the cases of home troopers, and indeed in all cases in which emotion could not be assigned as a causal factor, the respiratory disturbances are not present. Other, but not invariable, accompaniments of mutism, are inability to cough, whistle, and put out the tongue—the latter a suspicious indication of a not straightforward case. Some patients are unable to arrange the lips correctly for the production of certain sounds, and the tongue does not strike the teeth when an attempt is made to produce dentals. On recovery all have a certain amount of hesitation in their speech, and absence of this impediment must be considered a suspicious sign. The recurrence of mutism after some weeks and even months is quite common, and here, again, the emotional character of the cause is very evident.

The first series of cases will refer to mutism occurring in the field.

No. 62, an N.C.O., æt. 23. No history of previous nervous disorder or heredity. A clerk who enlisted in the second month of the war, he did little training, but was chiefly employed in an office. He went to France, and on the way up the line had to fall out twice with a weakness in the legs. He was in the trenches one month. They were shelled out of their first line of trenches, and retired to the second. He was told that he was buried, but he cannot remember anything about it. He lost his speech and hearing, and could not see with the right eye. His hearing returned in two days; a month later when he came to Maghull he was mute, but two days afterwards he spoke. He was lying in bed half asleep when someone bumped against the side of his bed. He uttered an ejaculation. Three months later he went home for the day, and as he got out of the train he saw another N.C.O., a great friend of his, who he thought had been killed by the same shell that blew him up. Naturally he was much surprised and hurried up to greet him. He put out his hand and said "How" . . . but could say no more. He continued to be mute for ten days, but suddenly recovered his speech when he replied "Good morning" to my salutation. He was very tremulous and speech was indistinct. The tremor quickly disappeared, but the stammering persisted for three months. Shortly afterwards he again lost his speech. He was incorrectly accused of having removed some writing paper from an office, and again he became very tremulous and his speech faint and hesitating.

Such a history is quite a usual one following shell-shock and burial. Hearing returns before speech. The recovery of speech was spontaneous and could not be attributed to medical treatment. The circumstances attending the recurrence of mutism is interesting as demonstrating the relation to the obvious stimulation of the emotions. The unexpected meeting of the man he thought was dead, and the unfounded accusation of pilfering, were not the only painful factors acting upon him, as he had a family trouble about which he sought my advice. The subsequent history was uneventful, and there have been no relapses. His neurasthenic state has greatly improved. Here, then, we have a not quite simple case of shell-shock, for he had in addition an irritating mental factor, and when this was removed the risk of relapse disappeared. Although it is not usual to find such complications in mutism, the possibility of their existence should not be overlooked. Shell explosion of itself is sufficient to produce loss of speech, but under proper treatment a simple case speedily responds. When relapses do occur, or suitable treatment proves unsuccessful, the whole mental field should be sifted and the sources of irritation removed.

No. 54, private, æt. 21, went to France in February, 1915. On April 23rd he was blown up by a "Jack Johnson." He remembers hobbling away, but discovered that he was very shaky, and that he could not speak; but his memory of the shock is not very clear. When examined three months later he had no tremor, was mute, and could not whistle or cough. He passed out of my hands, but returned six months later looking very well and healthy. He was happy and cheerful, but still quite mute. He had various ill-defined pains: "his heart felt like a bruise," "there was pain at the angle of the jaw," etc. Breathing exercises were at once begun. He whispered clearly in twenty-four hours, and could phonate loudly in two or three days. He was discharged to his dépôt, and did quite well for a few months, when on saying good-bye to a draft that was on its way to France, he found himself giddy and upset, and his voice became whispering and feeble. He was readmitted to Maghull, and regained his voice in a few days. In this case it may be interesting to mention that a few months before war broke out this man was working on a submarine. He accidentally made contact with the electrical apparatus and received a violent shock. He lost his speech on this occasion for three hours. It is therefore possible that suggestion had something to do with his attack of mutism following shell-shock. The only other point of interest is the long continuation of the functional disability—he was dumb fully nine months. When first he regained his speech he talked only during inspiration. This condition I have not uncommonly seen in other cases. It appears to me probable that he could have recovered the power of speech sooner if he had made a determined effort. Men have come under my care suffering from various functional troubles after they had passed through numerous hospitals with little or no improvement in their condition. They had often been told "you will get well now; this will be your last hospital." This is no doubt very

sound suggestive treatment, but when not successful it becomes highly discouraging by repetition. So it is not difficult to imagine how heartily sick of hospitals these poor fellows become. They have no intelligent conception of their illness, no one takes the trouble to explain it to them, and so they drift on, tired of trying to bring back a faculty the simple rudiments of which they do not understand. But let them get into a hospital where the atmosphere is entirely different, and where they will come under new experiences, then they may be induced to make a stronger and possibly final effort. So far as my experience goes, nothing is easier to cure than mutism, and no class of case responds more readily to proper environment. For this reason they are always welcome in my ward. One recovered mute infects another with confidence and hope, more especially if the treatment adopted in each case is the same, and simple enough to appeal to the patient's intelligence.

Another man went to France after a year's training, and five months later was blown up by a shell. He says that he lost consciousness for a time; he found himself the same evening in a dressing station, but he could not speak, and his hearing was imperfect. He was trembling. After five weeks his hearing had become normal. When he came under my observation he had been dumb for six months, excepting that he had been heard to say "Dash" when he burnt his fingers, about a month before I saw him. Under the usual treatment he spoke loudly and with only very slight hesitation after an interview of about quarter of an hour's duration. It should be noted that in this case the patient could hold his breath tolerably well, and his breathing was not rapid. After recovery I suggested to him that he could have talked sooner if he had wished, and he admitted that he had not made a great effort to get well. He was happy in hospital, and having got quite used to dumb show the loss of speech had not been a great inconvenience. In fact, he had got into a groove, and was content to remain there. This type borders on the malingerer. In several respects he was rather an inferior man; a barman in civilian life, rough, uneducated, rather cunning, but at the same time dull and lacking in initiative.

No. 69, private. He was buried by a shell. "This is what has been wrote to me; I don't remember." He was unconscious for six hours, and then found that he was deaf and dumb. After five weeks the hearing returned to one ear. He came to Maghull seven months after the shell explosion. This was his eighth hospital in England. When questioned as to what treatment he had had he answered, "I had really no treatment, only experiments," although in various hospitals electricity and anæsthetics had been tried. He regained his speech for three days in a previous hospital after a game of cards, but when he came to Maghull two months afterwards he was quite dumb, and in a very perverse frame of mind. He professed himself heartily tired of hospitals, and had no faith in himself or any medical man. Under the circumstances it was thought prudent to leave him alone, and allow the hospital atmosphere to produce in the patient a more readily receptive mental attitude. Three nights later during sleep he was heard to call out loudly, "Take the wire off." He was dreaming of the events immediately preceding the shell explosion. He spoke to the nurse who waked him. The next day he spoke, but only on inspiration. He

could fully expand the chest, and hold his breath for twenty-six seconds. For permission to quote this case I am indebted to Capt. Reeve.

I have included this example of mutism relieved during a dream, because, though not unusual for a mute to speak in a dream, on regaining consciousness he usually becomes silent again. Dreams are occasionally the cause of men losing their power of speech. One case lost it eight times, always as the result of the same dream. On each occasion he woke up agitated, breathless, sweating, and speechless.

Another example of deaf mutism occurring in the field may be given.

No. 60, æt. 19, a shipyard worker, of fair education (Standard VII.) Since childhood he had a lisp. No heredities. Within three weeks of arrival in France he was blown up and completely buried by a shell. He remembers the shell coming, but when dug out he was deaf and dumb. He also remembers being carried away. He was in a French base hospital for some months, and then in one at home for a month. He was able to whisper during the latter period, but could not hear. He again lost his speech by bumping into a man in the street. When he first came under my care he appeared very dull and stupid; the lips were kept open, but the complexion was florid and healthy. Treatment along the usual lines was adopted. He heard the raised voice almost at once; a few minutes later he could hear a whisper. His speech then received attention and he spoke almost at once, and at the end of twenty-five minutes he left the room with perfect hearing and only very slight hesitation in his speech. This case is probably an example of the type referred to by Lieut.-Col. Myers when he deals with the stuporose condition associated with shell-shock. The man looked very dull. A sudden noise produced an immediate blinking of the eyelids. I wrote on a piece of paper "You can hear"; but he shook his head and appeared quite indifferent to his position. He was then given a mirror and instructed to look at my eyes as reflected in it. The unexpected noise was repeated, and he saw his own eyelids react.

Such an experiment naturally raises the old problems. Was the man able to hear before? Is this condition the result of prolonged stupor? Was he a malingerer? Why did he not hear much louder sounds before? All these questions, excepting malingering, are very difficult to answer. I do not consider these men malingerers. Some patients describe how they heard sounds, but were unable to distinguish them, as they all felt like vague rumblings. These men do not realise that this is hearing. They are not accustomed to describe things accurately, they take or leave things as they find them; and if they cannot hear properly they are rather inclined to think that they cannot hear at all. Our patient had had a rather long railway journey the day before I saw him, yet he denied that he had heard the train moving or anything else, and I am prepared to accept his statement. His mental condition was distinctly one of apathy, and he appeared to be quite indifferent to

external things, and wholly lacking in initiative and energy. Now that he has recovered his facial expression is entirely altered.

The second group of which I desire to speak comprises those who develop mutism in hospitals after return from overseas. This group nowadays exceed the former, and this is no doubt due to the fact that treatment is undertaken in special hospitals in France.

No. 104, a private in the R.E., married. He went to France in October, 1915, and was partially buried by a shell at Christmas, 1916. He was very shaky after the explosion, but would not report sick. Next day he was worse, and, although advised to do so, would not leave his company as his younger brother was in it. However, the following day he was obviously so unfit that he was sent to hospital. He could speak and hear. He returned to light duty, and then obtained leave to go home for ten days. Two days after arrival there one of his children became ill and died the same day. An inquiry was held, as it was thought that the cause of death was cerebro-spinal fever, and it was suggested that he had brought the infection with him. He was accordingly sent to an isolation hospital. He lost his speech suddenly as the result of "thinking." Two months later he came under my care. He was mute, the head was shaking, and there was marked tremor of the arms and legs. He was very emotional and depressed. He could hold his breath for fifteen seconds only. His efforts to blow out a match were unsuccessful, and he made facial contortions when urged to increased efforts. The breathing was improved by demonstrations, and then the sudden artificial contraction of the abdominal muscles, applied in the middle of a long expiration, produced a sound. He was very pleased, but became highly emotional. Next day he whispered, and on the following day he spoke, but with a very bad stammer.

This is a fairly typical example of mutism occurring as the result of strong emotion. We have, firstly, the shell explosion; next, the homecoming; later, the tragedy of his child's death; and lastly, the suggestion that he might have been the cause of infection. The fact that in the first instance he refused to leave his brother is evidence how strongly family affairs entered into his life.

No. 62, a private, æt. 24, single. He had been in France for eighteen months and seen a good deal of fighting. In August, 1916, he was wounded through the right side of the face, the bullet passing across the floor of the mouth, and making its exit in the side of the neck. The tongue was not injured. At the same time he received two other wounds, and when lying wounded, a shell exploded close to him, covering him with earth. When invalided to England he was able to talk, but not loudly. He was returned to his dépôt, and his voice became quite strong again, but shortly afterwards it began to fade away, and ultimately he became mute. He said that he received no treatment; the desire to treat him was not absent however, as the experiment of

throwing a bucket of cold water over him when he was in a hot bath was unsuccessfully tried.

When first seen at Maghull he was an anxious-looking man; his respirations were 24 to the minute; he could cough but not whistle, and he complained of a "feeling in the chest as if it were too tight." The day following treatment he whispered, and the next day he spoke but with a very bad stutter. Why the voice disappeared completely is not easy of explanation, but one can readily understand how a man, wounded very close to the organ which, according to popular idea, is the principal apparatus of speech, might readily become mute. Pain itself would make speech difficult, at least for a time. Probably the return to his *dépôt* brought back all the old associations, and he was unable to overcome the resulting inhibition.

It would be easy to multiply examples of this kind, but one only need be given, an instance of deaf-mutism.

No. 85, private in the A.S.C., married, seven children, of whom five are in the Army. He gives his age as 48, but looks older. After working in France a year as a transport worker, he developed a "bad cold," and went into hospital. His work had been too much for him. His speech left him apparently as the result of coughing. Gradually his hearing became more and more affected until he seemed to become quite deaf. The man added: "I am nearly fifty now, and that was the age when my father became stone deaf." When seen he was apparently a deaf-mute. He could cough loudly, but not whisper, nor could he make a satisfactory effort to use his lips in the formation of sounds, and could not lip-read at all. In appearance he was very depressed and helpless. He gave a history of having been in the trenches, but not specially exposed to heavy shell-fire. In a month after his transfer to England he spoke in hospital. He stated that he could not hear properly, and could not carry on any form of conversation because of the impairment of hearing. He was sent home on ten days' leave, and on his birthday his speech suddenly left him, and the deafness became absolute. When examined two months later at Maghull the breathing was normal. After treatment he whispered in twenty-four hours, and two days later speech was normal. The following day he could hear a sudden noise, and recovery followed very quickly.

There are a few points in this case which may be noted. The speech was perfect before the hearing, and this held good for both occasions of his speech recovery. The very clear influence that suggestion played in the causation of his deafness is interesting. Lastly, the condition of his respiratory apparatus was normal. He had not been shell-shocked; apparently he had not been subjected to any disturbing emotions; but, as he said, "The work was too much for him." The special sense which had been his father's weak spot was adopted by the son as that offering least resistance.

As to mutism occurring in soldiers without active service my experience is very limited. One man became speechless following an attack of bronchitis. He had suffered from aphonia before the war, and was a very neurotic subject with a bad heredity. In another case mutism developed after a boil on the face. Both these men were members of the R.A.M.C. No doubt they had heard a great deal about mutism, and probably had seen some cases in hospital. Neither showed anything unusual in breathing, and I have little doubt that the second man was not genuine.

This brings me to the subject of malingering. No one who has seen much of functional nervous cases will dissent from the aphorism that before any treatment is adopted malingering must be excluded. In mutism the opportunity for the malingerer is immense. A man may be genuine at the beginning, then suddenly discover that he can speak, but maintain his former silence; or he may simulate dumbness from the beginning. Deafness may also be simulated, but the task is more difficult though not impossible. A much commoner form of shamming is aphonia. Such a man, after months in hospital, was "cured" by one day's strict isolation.

No. 70, N.C.O., æt. 30, reservist and ex-policeman. He was called up at the outbreak of the war and went through all the earlier fighting. At Christmas, 1914, he was blown over by a shell. The last thing he remembers is the approaching of the shell. He became deaf and dumb. A few weeks previously he had lost his speech as the result of shell explosion, but he never left the trenches, and his voice returned. This is the man's own account. In France he had a variety of treatment; he was placed blindfolded close to a big gun when it was fired, and he had electric treatment and anæsthesia in hospital. He was admitted ultimately to Maghull. He could hear but not speak. He went to Liverpool with another soldier, and was the centre of attraction to a lot of people. His companion could talk, and was evidently soliciting sympathy by showing him off in the street. A detective, suspecting that begging was going on, asked for an explanation. This was accepted as satisfactory, and the same day our patient overstayed his leave, and when next seen was talking to a woman. Unfortunately for him the detective who had previously spoken to him was passing at the time dressed in mufti. He spotted our patient as the man who, a few hours previously, he had been told was deaf and dumb, and promptly arrested him. I saw him next day, and he gave the history of the events leading up to his arrest. He said that he met a woman and they had a quarrel; that she struck him on the chest; that he exclaimed "Oh," and at the same time his hearing returned. In the police court I had to admit that such a thing was not impossible, and so the man returned to hospital. Seven days later, for no apparent reason, his speech and hearing again left him. He said that his neck seemed to swell out. A few days later he again overstayed his leave and was arrested by the police. In the police-station, when being searched and his money taken from him, he said "Money." He returned to hospital and came under my charge. He was apparently unable to take long breaths or inhale

cigarette smoke. Treatment was persevered with for a week with no improvement. Strict isolation was begun, and within an hour he whispered, and next day phonated perfectly. He explained that he had had to "keep pushing the apple down." When urged to make an effort to speak he had complained of pain in the larynx.

It is probable that the first stage of his condition was genuine. It is certain that after his return to hospital the loss of speech and hearing was simulated. The fact that he was apparently unable to take a long breath and was unable in my presence to inhale need not be regarded as contrary to the diagnosis of simulation, as he was commonly seen by others to inhale cigarette smoke.

It is difficult to give any satisfactory explanation of mutism and deafness. I have already said something about the former, but nothing about the other. Deafness corresponds to functional anæsthesia. It seems to be produced by a mental stimulus sufficiently powerful to deaden the central area for the reception of sounds. Functional deafness may engraft itself on a passing organic condition. Labyrinthine concussion is a recognised condition. Functional deafness is somewhat analogous to the state of amnesia frequently met with in soldiers returning from overseas. I have seen two instances where the amnesia persisted after the deafness was cured. No doubt cases seen at an earlier stage would show the alliance of the two conditions more clearly and more frequently. The loss of memory is an unconscious effort to blot out the horrors of the patient's past experience. Probably in much the same way, deafness is a successful but involuntary means to shut out the present. Then ignorance, lack of self-confidence, and initiative maintain the disability.

The forms of treatment of mutism are endless in variety. My own may be briefly described as follows: The patient is asked to take a long breath. He is then told to hold his breath; he fails, but very frequently persists that he succeeded. I then give him a cigarette which he is asked to inhale, when the patient at once discovers that he is incapable of holding his breath. He learns, possibly for the first time, that his respiratory apparatus is at fault. Exercises to promote correct breathing are then undertaken. The most important point is to obtain a good volume of breath without hesitation on expiration. He is asked to blow out a match at increasing distances; then to breathe freely, trying to say "Ah!" at the same time; then to sigh the sound "ow," and later the sound "ou." Three long breaths and three sighs, together with the correct mouth formation, produce the sentence "How are you"? Once deep breathing is established, a sudden squeeze of the abdominal wall will produce phonation. The immediate effect will be a display of emotion. Tears are frequently the precursor of speech. As soon as a man can whisper faintly but sufficiently for others to hear I bring in

another patient or a nurse to show the patient that he can now be understood. The following day the same process is repeated, and as a rule the man will talk freely after the third day. The method of suddenly squeezing the abdominal wall has already been described in a French journal, but I have lost the reference.

Deafness is also dealt with on simple, common-sense lines. The patient is seated in a chair and holds a small mirror in his hand. I stand behind the man and instruct him to look at my eyes reflected in the mirror. After a suitable interview a sudden noise is made without any movement on my part. The patient will blink and the mirror will render him conscious that he has moved his eyelids. He is also conscious that the movement is a proof that he can hear. The whole performance is simplicity itself, and it appeals to the man's common sense and he is convinced, against his inclination in some cases.

In both these simple methods the principal agents are common sense and re-education. Lip-reading and the deaf and dumb alphabet should never be allowed.

Clinical Notes and Cases.

A Case of Porencephaly. By H. E. BOND, M.D., Dip.Psych.Med. (Cantab.), L.R.C.P. and S.(Edin.).

THE subject of this paper, R. I. M—, was admitted into the Jamaica Government Lunatic Asylum on April 13th, 1914, with a history of epilepsy. She was a well-developed woman, æt. 37, with a right-sided hemiplegia; the right upper limb was flexed at the elbow, wrist, and finger-joints, a very limited range of movement being left. The muscles of the limb were quite wasted. The lower right limb was equally affected as regards wasting and limitation of movement. She could neither spit nor whistle, and saliva was continually dribbling from her mouth. She was suicidal but not dangerous. Previous history: There was no instrumental delivery at birth. She started to have fits when sixteen months old. The paralysis was noticed at that time, and she attended school for a period, but, owing to the severity of the fits, had to be taken away. No one of her relatives had been insane.

During her stay in this institution she had fits periodically and suffered from recurrent attacks of pellagra. Apart from these she enjoyed fairly good health. For six months prior to her death there was a complete absence of fits, but she, however, gradually began to get very thin and emaciated, and had to be confined to bed up to the day of her death—September 2nd last.

Post-mortem examination revealed the following: The skull was very

thick, dense, and heavy; the dura mater thickened, fibrous, but not adherent to the calvarium; the pia-arachnoid opaque and cedematous; brain, there was a notable disproportion between the two sides; right hemisphere, simple convolucional pattern, congested, no wasting; left hemisphere, simple convolucional pattern, pale, general wasting; section, from the anterior to the posterior pole there was a well-marked cavity containing straw-coloured fluid which was not turbid. When the fluid was let out the cavity was smooth, there being a complete absence of the basal ganglia or any other vestige of brain matter. Lying across the floor of the cavity were remnants of the choroid plexus. There was an excess of cerebro-spinal fluid. The brain weighed 895 grm. Examination of the cerebellum, pons, and medulla showed nothing abnormal. No morbid changes calling for special note were found in any of the other viscera.

For permission to publish particulars of this case I am indebted to Dr. D. J. Williams, Medical Superintendent.

Some Notes on the Case and Post-mortem Examination of a Microcephalic Idiot—Absence of Corpus Callosum. By G. N. BARTLETT, Medical Superintendent, Exeter City Asylum.

E. G—, a female, was admitted in October, 1904, æt. 14.

Her general development and stature were much below normal, her height being recorded as 4 ft. 6½ in., her weight 5 st. 2 lb., the circumference of the head 18 in., and the other cranial measurements as correspondingly small. Her vocabulary consisted of a few words and phrases and some bad language, and her speech was a very indistinct drawl. Her movements were clumsy, and her gait a shuffle but stable enough to allow her to knock another patient down. She had a double squint and was more than usually degenerate and repulsive in appearance, especially as facial contortions were common, and the mouth usually open and dribbling. She proved herself uneducable, even as regards her personal habits, and quite dependent, and in a short description her uncontrollable temper only need be mentioned; an exhibition of screaming, swearing, kicking, biting, scratching was forthcoming on the slightest provocation. Her habits were very dirty and destructive, and her table manners were repulsive.

In 1909, ulceration at the angle of the mouth was recorded and regarded as syphilitic, but there was no amelioration under prolonged treatment. She was always thin and anæmic, and subject to digestive troubles due mainly to her habit of bolting food. Suspicions of tuberculosis of the lungs and lesions of the spinal cord, aroused from time to time by her condition, were dispelled by negative examinations, and there was no apparent change in her movements and powers of

co-ordination up to the time of her death in October, 1917, at the age of 27.

The *post-mortem* examination revealed complete absence of the corpus callosum, a condition unsuspected during life, as in some other recorded cases of this rare abnormality. (I regret time prevents a study and paraphrase of the literature on this subject.)

Other conditions found were microgyria in the occipital and frontal regions of the brain, and internal hydrocephalus, the lateral ventricles being enlarged out of all proportion to the size of the hemispheres, and the grey and white matter much attenuated. The remarkable smallness of the brain and other organs is shown by the appended weights. The kidneys were lobulated, and there was broncho-pneumonia in both lungs.

Weights.

Encephalon	870 gm.
Right hemisphere	380 "
Left hemisphere	385 "
Cerebrum	85 "
Pons and medulla	20 "
Heart	140 "
Right lung	235 "
Left lung	355 "
Liver	640 "
Kidneys	65 "

Occasional Note.

Reform in Lunacy Law.

AT the November Meeting of the Parliamentary Committee it was resolved to form a sub-committee to consider the amendment of the existing Lunacy Laws. This sub-committee has since been formed, consisting of twelve members, including the chairman and secretary of the parent committee, who will also act in these respective offices for this sub-committee. It has already commenced its labours by a critical investigation of the important legal changes advocated in the Appendix of the Status Report, which report, as our readers are aware, was adopted by the Association at its Annual Meeting in July, 1914. It is now more than a quarter of a century since the last principal Lunacy Act came into operation, and although many amending measures have since been presented to Parliament, no further progress has been made. It is hoped that public attention has been awakened by the mental cases

resulting from the war; and that during the era of reconstruction that must inevitably follow when peace is finally declared, if not before, a more enlightened opinion may prevail which may lead to better provision being made for the treatment of certain types of mental disorder. The admission of voluntary boarders to County and Borough Asylums, for instance, should no longer be a stumbling block, and some alternative method should be devised with proper safeguards for dealing with cases of temporary or unconfirmed insanity; and above all, exists the desirability of the establishment of psychiatric clinics whether as separate hospitals for mental disorders or by the allocation of special wards in general hospitals for these cases. Much has been written on this subject, and we call to mind the valuable introductory address of the Emeritus Lecturer in Psychiatry at the Middlesex Hospital Medical School, which appeared in our Journal for January, 1915. Whether such clinics can be contrived on a voluntary basis or by subsidy from the State, and whether some limited form of legal detention should be granted for cases that have overstepped the border-line of insanity, are matters that require careful consideration. Many of our members have no doubt pondered over these problems, and it would be of advantage to the sub-committee referred to if they would state their experience of defects in the present system of dealing with patients suffering from mental disorders, and how in their opinion these defects may be remedied. The Chairman or Secretary of the Parliamentary Committee would be grateful to receive such communications. Although the war while it lasts must continue to absorb our energies, nevertheless, it is incumbent on us to see that our speciality keeps in the van of progress, and the present time does not seem inopportune to give this matter of amending the Lunacy Laws our immediate attention.

Part II.—Reviews.

A Text-Book of Insanity and other Mental Disorders. Second Edition. By C. A. MERCIER, M.D., F.R.C.P., F.R.C.S. Pp. xx + 348. London: George Allen & Unwin, Ltd. 1914. Price 7s. 6d. net.

The second edition of this illuminating volume appeared at the outbreak of the war, and we regret that, owing to the exigencies of the times, the review of this publication has been so long delayed. Its size is about half as large again as that of the first edition, which, perhaps, the medical student will deplore, but the author acknowledges in the preface that the considerable additions he has made are intended for those who devote themselves to the special study of insanity.

The introduction, excellent as it is, remains unchanged, as does also the chapter on the Causes of insanity. The chapter on Conduct con-

tains an account of those activities which other authors usually include in a preliminary discourse on psychology. In this portion there is also no alteration except the insertion of a fresh paragraph on the subject of the reproductive instinct. The chapter on Mind completes Part I, which is entitled "The Institutes of Insanity." This interesting chapter, which has been much amplified and entirely remodelled, should be carefully read by every thoughtful student. Dr. Mercier has arrived at the conclusion that psychology as taught in the ordinary textbooks is of little use in the elucidation of insanity. He laments the fact that the results of introspection have never been collated with the phenomena of disease, and he now endeavours to make an advance in this direction. Following Hughlings Jackson's doctrine of evolutionary levels of the nervous system he has sketched out a fourfold division of grades or levels of Mind. He mentions five primary mental faculties that may become disordered, *viz.*, Desire, Volition, Feeling, Thought, and Memory, but he increases these to seven by considering Feeling and Thought in their subjective and objective aspects. The four evolutionary levels apply to six out of these seven faculties—Memory not being susceptible to such levels. In this scheme which Dr. Mercier has devised there are, therefore, twenty-five compartments to be enumerated in which mental disorders can be mapped out. By Subjective Feeling the author means feeling of pleasure or pain graded as crude, euphoric, æsthetic, and moral, and by Objective Feeling the residue that remains of compound feeling when pleasure or pain is abstracted and removed, classed in levels as sensation, emotion, æsthetic, and social. By Subjective Thought Dr. Mercier introduces the consideration of self-estimation, which he says has not received recognition before and which is so often disordered in insanity, the four grades being physical, mental, possessive, and moral. By Objective Thought he refers to processes of reasoning as regards the environment, the evolutionary steps being perception, caution, ingenuity, and wisdom or prudence. The levels for Desire are racial, selfish i, selfish ii, and social, the levels for Volition being trivial ends, sub-subordinate, subordinate, and main ends, whilst Memory is discussed as a whole and on a different basis. For a due appreciation of these levels and the various disorders to which these sections of the primary faculties are subject the reader must refer to the lucid descriptions given in the book. His attention is particularly directed to the differentiation of mental disorders that may be regarded as sane from those that occur in insanity, as the title of the book implies. Dr. Mercier has tabulated these arbitrary divisions of Mind diagrammatically and suggests that blank forms should be used, so that disorders can be indicated thereon by shading, and he exhibits specimens accordingly. Probably some asylum medical officers have already made use of these forms in their routine work.

Part II is headed "Forms, Types, and Kinds of insanity," and begins with Classification, a subject on which the author is an acknowledged expert. He has followed a strictly logical method which has involved, in place of the double series—Forms and Varieties of insanity—which appeared in the first edition, the advent of a third series, *viz.*, Types, *i.e.*, acute or chronic insanity—with sundry subdivisions. Forms

of insanity—and here Dr. Mercier treats of insanity as the symptom—consist of disorders of the several faculties, but always with affection of the highest level of thought which renders the patient unable to recognise the disorder of which he is the subject—according to the author's teaching. Kinds of insanity refer to insanity the disease, meaning thereby the whole group of correlated disorders from which a patient suffers and that can be traced to a single agent. Insanity the disease includes insanity of undevelopment as well as insanity of dissolution, and the last-mentioned is then divided into two categories: Symptomatic and Idiopathic, the former being dependent and the latter independent of any bodily disease so far as is known. This we acknowledge to be an important step in classification and the further subdivisions are both practical and sound. It is to be remembered, however, that this table has to be used in connection with the Forms of insanity and Types of insanity already mentioned. It may be noted that General Paralysis is regarded as symptomatic insanity, and that Alcoholic insanity may be symptomatic or idiopathic as the case may be. Whether the tripartite nature and many subdivisions of this classification will render it too cumbrous for the average student remains to be seen. The delineations of each individual class of the three series are brief but excellent, some of them are rewritten, and there are a few new importations, such as the insanity of Childhood, Traumatic insanity, and Sequelar insanity.

Part III, which deals with the Legal Relations of insanity, opens with a few fresh paragraphs of a practical nature, and has also the provisions of the Mental Deficiency Act, which has come into operation since the first edition was published.

The book is one that every asylum medical officer should study. He will not fail to recognise its systematic and orderly arrangement, to which fact is attributed the absence of an index. The psychology that is presented to him is plain and concise and the definitions are clear and acceptable, whilst logic at last reigns supreme in the difficult task of the classification of insanity. To refer to a few points of special interest he is asked to learn to discriminate between euphoria (elation) and exaltation, between dysphoria (misery) and abasement, to gain a due appreciation of the levels of thought, to observe the outgrowth of suspicion from an exaggeration of caution, and to regard morbid suspicion as lying at the root of stubbornness (or resistiveness). The author pays particular attention to this last-mentioned disorder, which he considers an invariable sign of deep insanity and although clinically differing widely from, in his opinion, is essentially allied to paranoia. Dr. Mercier deals in a somewhat novel manner with the faculty of memory, which, he points out, is not only concerned with recollection of the past but with remembrance of future events; paradoxical though he acknowledges this to be, it is, however, true. Inasmuch as the author restricts the term dementia either to a type or a kind of insanity he uses the word "anoia" for the weakmindedness and defective conduct which every case of insanity exhibits in some degree.

Most of us are in thorough accord with the doctrines of Dr. Mercier, whose writings have done so much to enhance the scientific status of psychiatry in this country. There may be a few points that some of us

do not quite see eye to eye with him in this book. For instance, the impression is left that there is, perhaps, a tendency to extol the influence of thought at the expense of feeling in the interaction of these constituent elements of mind, especially when we consider the beginnings of insanity. Can we subscribe to the view that a person is sane whose intellect is unclouded but whose feelings are deranged and prompt to insane action although self-control still exists but threatens to give way? Again, is not the person rightly regarded as insane throughout whose instability is revealed by hallucinations or delusions which are from time to time relatively sane or insane—his normal insight being alternately present and absent? Such cases occur to us when we think of the shading in Dr. Mercier's diagrammatic forms. Further, we can recall patients suffering from obsessions, from morbid hesitation and vacillation, possessing full recognition of their disorders, yet requiring certification to promote their recovery. That disordered conduct is the earmark of insanity no one will deny, and it could not be otherwise seeing that our actions are but the outward expression of the mental mechanism within us. Surely this has been fully recognised by authors in the past as well as by the legislature, but all the same we owe a debt of gratitude to Dr. Mercier for his special work on this matter—a summary of which this book contains. One word more—the reader must not hope to find in these pages any reference to sub-conscious mental activities or for any support of the newer terminology such as dementia præcox or maniacal-depressive psychoses, and he must not be surprised to find a decided antipathy towards the Freudian psychology. But with these brief comments we heartily commend the book as one of the highest value and we feel assured it will be read by everyone who takes an interest in mental science, and it should rank in the foreground amongst text-books for students and practitioners of medicine.

Alfredo Niceforo, I Germani: Storia di un' Idea et di una "Razza."
Rome: Società Editrice Periodici, 1917. Pp. 88. Lire 3.50.

For many years before the war the Pan-Germanic idea of a "Germanic race" of tall blonde dolichocephals, assumed to be the noblest race in the world, the creators of civilisation, a race which had already been infiltrated into the finest figures of all European countries, and which was destined to dominate all countries, had secured considerable vogue. Naturally this vogue was mainly confined to Germany, and even in Germany was not accepted by most serious investigators. The original pioneer was, indeed, a distinguished Frenchman, Count Gobineau, although in his mind it was a much wider, vaguer, and more fluid idea than it became later, and the most thorough-going champion of the idea at the present time is a Teutonised Englishman, Mr. H. S. Chamberlain. To-day this idea has become familiar to many who never before heard of it, and the author of the present little book sets himself, in a popular style but a scientific spirit, to combat it.

Prof. Niceforo, well known as criminologist, anthropologist, and sociologist, is very well equipped for his task. He always keeps close to facts, and his tightly-packed footnotes on every page show how well

he possesses the literature of his subject. Moreover, he reveals a quality which to-day is rare; he is able throughout to preserve an atmosphere of calm scientific discussion; he never once indulges in the slightest vituperation of his opponents or even depreciation. It is unnecessary to remark how greatly this adds to the force of his arguments.

Gobineau, with his rather vague idea of a special fair race which had created civilisation, had not specially identified it with the Germans. Durand de Gros (again not a German), who furnished another germ for the myth to work on, also had no eye on the Germans when he made the interesting observation that the inhabitants of towns and the higher social classes are more dolichocephalic than the dwellers in the country and the lower social classes. But a few ingenious and Chauvinistic German scholars put together these ideas and facts, and proceeded to argue that it is the German who represents this fair dolichocephalic aristocratic race, the creators of civilisation, even outside Germany by their migrations into other lands (it is argued, for instance, that Dante and all the leaders of the Italian Renaissance were really Germans by name or in physical type), and destined to dominate the world.

In the course of his little book Prof. Niceforo convincingly demonstrates the fallacies and confusions on which this Pan-Germanic myth has been built up. Even if we choose to consider the fair dolichocephals as the most exalted type of men, they are not specifically German; they are found all over Northern Europe, from Ireland to Russia, and constitute what is now commonly called the Nordic race. They are not even a majority, but only a small minority, of the population of Germany, which is mainly constituted of a very different race, the men of the brachycephalic so-called Alpine type. How little claim the Germans possess to be specially identified with the dolichocephalic race is shown by its existence long before there were any Germans. In Neolithic times all Europe was peopled by dolichocephals, and it seems probable that originally the fair dolichocephals of the North were of the same stock with the dark dolichocephals of the South (now commonly termed the Mediterranean race), from whom they became differentiated by the influences of the northern climate. On these and the other points raised by the Pan-Germanic myth the author writes clearly and concisely, not attempting to force the argument at points where doubt still exists. His discussion is probably the best and most competent within brief compass yet published.

HAVELOCK ELLIS.

La Psichiatria Tedesca nella Storia e nell'Attualità [*German Psychiatry in History and at the Present Day*]. By Prof. E. LUGARO. Florence: Tipografia Galileiana, 1917. Pp. 357.

When the social history of the last thirty years of the nineteenth century and of the first twelve of the twentieth comes to be written, the slavish credulity with which the fiction of the mental superiority of the German peoples was accepted by other and nobler nations will astonish the student. We are too close to the period, and many of us still suffer too much from the obsession, to be able to judge the phenomenon

fairly. Yet Prof. Lugaro's book goes a long way to put us in the position of the future historical student. It places in the full glare of the limelight the work of German scientists stripped of self-assertion, takes it at its real value, and compares it with that of other labourers, European, American, and Japanese in the scientific field. It helps us to view ancient and recent events, personalities, discoveries, and labours in their true perspective, and it honestly gives credit where credit is due.

The keynote of the book is that thought is universal. "If to the word thought is given its proper signification, that of the work of the intellect, it is evident that to speak of 'German thought' (or that of any other nationality) is to speak nonsense. There is no such thing as German thought, there cannot be, because thought does not recognise nationality."

"Correct thought is the conscious image of reality, therefore it can only be one. Error, the spurious product of thought, may be multiple, particular, regional, individual. In that which they have of the essential, the correct, and the true, Chinese thought and European thought are identical. Also, apart from every historical connection, the thought of the Egyptians, of the Hindoos, of the Phœnicians, of the Greeks, of the Romans, of the Italians of the Renaissance, and of modern Europeans follows schematic lines of continuous and harmonious development."

After a few pages devoted to preliminary considerations, the author proceeds to sketch the history of the birth and progress of psychiatry from the earliest times to the present day. He touches on the origin, development, and reformation of asylums for the insane, and as the story unrolls itself, the reader observes, perhaps with astonishment, how in all these matters Germany has lagged woefully behind other nations.

The Professor then passes on to a review of some of the chief mental disorders, roughly dividing them for the convenience of study into psychoses having an organic basis, and those which are functional, allowing, of course, for much overlapping. He points out how little of our knowledge of these conditions and of their treatment we owe to the Germans in comparison with what we owe to labourers of other nationalities.

Afterwards he studies in detail the work of Griesinger, Krafft-Ebing, Schüle, Arndt, Meynert, Ziehen, Wernicke, Kraepelin, Freud, Adler, Specht, and Münsterberg.

The writer's exposition of Freudism is a model of clearness. He shows us Freudism stripped of metaphysics, and Freudism stripped of metaphysics is a feeble affair. He warns the practitioner of psycho-analysis of the dangers and pitfalls which beset his feet.

A considerable portion of the latter part of the book is devoted to the consideration of some general questions concerning the anatomy and physiology of the nervous system, and of the opposition with which many of them have been received by German scientists. The Professor rather apologises for what he considers a digression from the original plan of his book, which was intended to be a historical and critical examination of pure psychiatry, and of the work done by the Germans in that field. But the reader willingly excuses the digression, for it gives him the opportunity of studying certain physiological problems of

the greatest interest both to the physician and the alienist as expounded by a master of clearness and perspicuity.

The last section of the book is devoted to the consideration of the "German method," and of Imperialism, one might almost say militarism, in German science, in German universities, and in German teaching generally. From a historical point of view this section is of the greatest importance, for it reveals with what subtlety and craft, with what methods worthy of a petty tradesman, the German scientist has wormed himself into the false position which he has occupied for so many years in the world of thought.

Generally speaking, the book must be considered as a historical work, but frequently the physician and the pathological anatomist overcome the historian, and present us with miniature clinical pictures which arrest the attention from their vividness, and with thumbnail sketches of morbid conditions remarkable for suggestiveness of detail. In places the seriousness of the subject is relieved by a play of irony, which is seen, perhaps, more than anywhere else in the descriptions of the individual work of the leading German scientists; for example, in the pages devoted to the consideration of the theories of Theodor Meynert, who "places his clinical study of mental diseases on the solid pedestal of anatomy," and immediately drifts hopelessly away into more or less pure psychology.

For the English reader, what is most pleasing in Prof. Lugaro's book is the generous homage he pays to English work. Look at the long line of English physicians and alienists, from Sydenham to Clouston, whose names he quotes! Does it not fill one with honest pride? And it is not to the honoured dead alone that he refers. As one reads the pages of his book, one realises that for clinical research and experimental work Englishmen still living stand second to none.

But the writer does not forget the other great schools of the world. He metes out praise as unstintingly as it is well deserved to those of his own country, to those of France and America, and to the modern Spanish schools, particularly to that of Barcelona. Lugaro is just also to the Germans. Where they have done honest work he credits them with it. But where they have stolen other people's ideas without acknowledgment, and where they have robbed others of the fruits of their labours, he holds them up to the derision of the world as thieves and plagiarists.

In conclusion, it is to be said that the book is remarkable for the enormous amount of information, both historical and scientific, which it contains, it is well printed, and it is provided with indexes, which are complete and useful.

J. BARFIELD ADAMS.

Automatic Sleep (Le Sommeil Automatique). By Dr. GEORGES BOYER.
Paris: Alfred Leclerc. Pp. 92. 1914.

The first fifty-two pages of this contribution to the pathology of sleep are devoted to a somewhat extended consideration of certain aspects of normal and abnormal psychology, which serve to pave the way to the study of the particular symptom indicated in the title.

Chapter I is occupied by the consideration of automatic as contrasted with voluntary activity. It includes a study of the historical

development of the term "automatic," a *résumé* of the meanings which have been attached to it, and an enumeration of the various psychological phenomena which are associated with an act or thought to which the term "voluntary" can rightly be ascribed.

These preliminary considerations enable the author to detail the various grades and types of automatism, from a simple reflex to a complicated reaction of defence, and to demonstrate how each of these acts lacks certain psychological elements which differentiate it from a voluntary activity. He then devotes attention to pathological automatism both in the sphere of thought and action, dividing abnormal automatic acts into three groups, according as to whether the disorder is one of inhibition, consciousness, or personality. The chapter concludes with a schematic presentation which serves to classify the various phenomena grouped under the term "automatic."

The next chapter deals with the relation of sleep and the will. The author develops in detail the conception, with which the name of Claparède is especially associated, that sleep is a positive function, a positive act comparable with other acts which the will directs, and not merely a passive function or negative state, a kind of abdication of the higher powers of mind. He shows that, in normal circumstances, sleep does not occur apart from the will of the individual; its usual rhythm can be modified by the will, and the will is also actually present, in a lesser degree, during sleep itself. The hypnique function is not purely physiological, it is not dependent solely on the lower centres, but dependent on the control of the higher centres, as are co-ordinated movements directed voluntarily to a certain end.

The two essential elements of sleep—muscular relaxation and generalised attention—are both under the control of the will, and the need of sleep, the preliminary state of fatigue does not determine, *ipso facto*, the arrival of sleep, any more than hunger automatically leads to the act of eating. Sleep is thus a positive act, a consent, an act of will, and like voluntary thought, a mental disposition, an attitude.

The author reserves the term "automatic sleep" to that condition in which patients affirm that their sleep is unnatural, that they are sent to sleep, mesmerised, hypnotised, forced to sleep, and so on. The two essential characters of this symptom are its involuntary nature, and the fact that it is ascribed to external agency. It is explained as a disorder of sleep itself, in the same way as an hallucination is a disorder of perception. Like an hallucination it obtrudes itself against the will, it ceases to be under the control of the personality, and it becomes a phenomenon which the patient regards as due to an external agency.

It is certainly of interest to bring this symptom into line with other morbid phenomena, but to merely lay emphasis on the fact of dissociation would seem to be somewhat inadequate as an explanation. The cases cited are evidently instances of dementia præcox, and the delusional interpretations in regard to sleep are no more than one manifestation of the whole morbid picture. A further analysis would, no doubt, reveal more than the mere fact of automatism; it would suggest the underlying mechanism and reveal the abnormal trends which find expression in this particular way.

While in this respect the treatment of the main theme is somewhat

superficial and unconvincing, the essay as a whole is an interesting example of the French school of psychology. Perhaps its chief interest and value lie in the emphasis which is laid upon the important relation between sleep and the will. This aspect of the psychology of sleep is of considerable clinical importance, and it deserves full recognition and study. The want of sleep in neurasthenic and psychasthenic patients, a symptom often so prominent, is often no more than a want of confidence, a lack of will-power in respect to sleep. It is one expression of a general inability to perform acts under the control of the will. For this chapter alone, as well as the general discussion upon automatism and volition, the book well repays attention.

H. DEVINE.

The Ideal Nurse. By CHARLES A. MERCIER, M.D., F.R.C.P
F.R.C.S., etc.

Although delivered some eight years ago in the form of an address to the nursing staff of the Retreat at York, this little *brochure* belongs to that class of publications which time cannot wither nor custom stale. Embodying, as it does, an ideal to reach which should be the aim of all those who have adopted as their *rôle* in life the nursing of the insane, it at the same time gives practical instruction and guidance as to how this object is to be attained. Nor is its use intended to be limited to those only who are engaged in asylum nursing. It contains matter which cannot fail to attract the attention of all those who follow any branch of the nursing profession, and to afford help, teaching, and encouragement to them in their daily work.

Some people have hands and no brains. Others have brains and no hands. The fortunate ones have both. Perhaps in no case is this more obvious than in that of the operating surgeon, whose success will be proportionate to his possession of these two essential attributes. But Dr. Mercier holds, and rightly holds, that the same is true as regards the nursing avocation. The ideally endowed nurse is one who has both keenness and agility of brain, and skill and dexterity in the use of her hands. The first depends largely on heritage; one must be born with it, and those who have it not are in nowise deserving of blame. The last can be acquired; and even persons who are naturally slow and plodding in their mental operations by sheer hard work and untiring perseverance can eventually become really efficient nurses. In this connection Dr. Mercier puts in striking contrast cleverness and capability. "A person who is not clever may make a first-rate nurse; but a nurse, however brilliantly clever, who is not capable is worthless. . . . If you are not born clever, no amount of pains and study will make you so; but anyone may become capable by taking pains." Sympathy is another prime essential. Someone has said that success in the medical profession depends on one part knowledge, and three parts sympathy. The same, no doubt, is true in the case of the nursing profession. This consideration leads not unnaturally up to what is practically a lay-sermon with 1 Cor. xiii as its text, St. Paul's well-known eulogy on Charity, which occupies almost the whole of the latter half of the address, and is full of practical suggestions as to how

to carry out in one's life and work the principles enunciated by the great apostle. It might well be designated the philosophy of loving-kindness, a term which the preacher prefers to the Biblical word Charity.

Some of Dr. Mercier's observations come almost under the category of aphorisms, such as: The only way to learn how to do a thing is to do it.—The intelligent worker is he or she who knows when it is proper and necessary to break a rule. Rules are necessary because workers are stupid.—Never, under any circumstances, attempt to coax a patient by a lie.—Rejoinder and retaliation is a confession of defeat.—I have spent a lifetime amongst the insane, and the most salient result of my experience is that I never despair of a patient's recovery.

We can confidently recommend this little book—unique of its kind—not merely to attendants and nurses, but to every one who is engaged in the treatment of the insane. It might, with great advantage to both nurse and patient, be carried in the pocket, and referred to with the same regularity and constancy as that with which a priest peruses his breviary. The principles there laid down should be known by heart, and thoroughly assimilated, and every effort made to carry them out in practice. The keynote of the address is encouragement, its motto "Sursum corda," and we cannot conclude this notice more appropriately than by quoting the inspiring words which occur just at its close: "When you watch the subsidence of excitement, the removal of depression, the dispersion of suspicion, the gradual return to sanity; when you open the gates and say farewell, and bid God-speed to a patient whom you have nursed through the valley of the shadow of death, and raised out of the mire of tribulation; when you send him home clothed and in his right mind, and think of the load of misery you have been instrumental in removing from him and from his family; you taste a joy as refined and as pure as that of the angels of heaven over the sinner that repenteth."

The Third Annual Report of the Board of Control for the year 1916.

The third report of the Board, ordered to be printed on October 17th, 1917, is very much abbreviated as compared with the first. In Appendix A there are only nine tables instead of twenty-four, and in Appendix B only five instead of fourteen.

This economy of printing is no doubt justified by the state of war, but it could be wished that similar care had been exercised in matter in which the saving, instead of amounting to a few score pounds, would have amounted to so many thousands. The want of these tables reduces the report to a stereotyped repetition of the baldest facts and renders any attempt at criticism or interpretation almost impossible.

The decrease in the number of the notified insane is again a striking and interesting phenomenon, opening the door to much speculation in regard to the influences producing this result.

The actual decrease for the year 1916 was 3,159, the total 134,029 on January 1st, 1917, being less by that number than at the commencement of the year under review. The number on January 1st, 1915 (the highest recorded) was 140,466, and if the average annual increase

of the preceding decade had continued, the present year would have opened with 144,968, or 10,939 more than the actual number.

The total decrease on the two years, therefore, is 6,437, and this result has been brought about by decrease in the admissions, those in 1915 and 1916 being respectively 2,055 and 2,527 less than in 1914, together with the increase of deaths, which in 1915 and 1916 were 2,157 and 2,376 more than in 1914. The recoveries were 305 and 648 less in these compared years, whilst the discharged not recovered were increased by 707 and 367 respectively.

The want of the usual tables makes it very difficult to follow out satisfactorily the incidence of these factors in the relation to sex, but there is no doubt that the reduction is somewhat larger in the males. These on January 1st, 1916, being 46 *per cent.* of the total insane population as compared with 46.2 *per cent.* on January 1st, 1915. On the other hand, the decrease in the admissions for 1916 shows only a diminution on those of 1915 by 1.7 *per cent.* for men as compared with 2.7 *per cent.* for women (in actual numbers, 168 men and 304 women).

In the absence of the necessary facts only conjectures can be made whether the stimulus and excitement of war has acted beneficially on a number of persons who, under ordinary conditions, would have become insane, or whether, as already suggested, the restrictions in the use of alcohol have led to lessened intemperance and improved general health, etc.

In regard to men, as the report points out, there are certainly a large number who are being treated in hospitals and homes who will ultimately gravitate into asylums. When the actual facts become obvious it is quite possible that the diminution will prove to have been larger among women.

The increase in the number of deaths appears to have been largely due to senile decay, in addition to a larger mortality from phthisis.

The drain of attendants for military service has been met everywhere, the report shows, by employing female nursing in suitable wards on the male side of asylums; as a result it appears that out of 5,289 attendants of military age over 3,000 have been called to the colours, many of whom have been wounded or killed.

The voluntary boarder system has been threatened by an innovation that might seriously impair its usefulness.

The report records that at the Bodmin Assizes, two men who pleaded guilty to acts of gross indecency were bound over to come up for judgment when called upon, provided that they agreed to go as "voluntary boarders" to two provincial licensed houses. It is not astonishing that the Board writes that this has caused them great anxiety or that they have laid their grave objections to this procedure before the Lord Chancellor and the Home Secretary.

That these persons can be considered as "voluntary boarders" does not seem possible to a non-legal mind. It is not stated whether the boarding—whether voluntary or not—was for any fixed period; whether, for example, forty-eight hours' residence would be sufficient to comply with the Judge's direction? or whether, on the other hand, if a fixed period of boarding, say six months, was required. In the latter case it would approximate to a sentence for that period. Neither is any

indication stated whether the boarding period should be determined by the medical authority of the licensed house or by the boarders themselves, or by the judicial authority.

The further question arises whether any licensed house would voluntarily receive such persons, or whether they, if designated by the Judge for that purpose, would be bound to receive them.

The proposition certainly seems an impossible one : and it must be hoped that the learned Judge will himself see this.

The total average cost per head for maintenance for all asylums showed a further increase of $6\frac{3}{4}$ d. per week on the previous year ; and this appears to be a moderate rise in relation to the increased cost of food, etc.

Mental deficiency care would appear to be progressing as satisfactorily as war conditions will permit. The report speaks highly of the valuable help of voluntary associations in the supervision of defectives. The Brighton Guardianship Society is specially cited as an example. The number of mental defectives on the register of the Board are : January 1st, 1918, 6,836, of whom nearly 6,000 were in certified institutions ; but this does not include a very large number, who are at present cared for by the Education and Poor Law authorities, as well as many others not yet dealt with in any public way.

The training of teachers and attendants on the mentally defectives is receiving the attention of the Board, and the hope is expressed that the next annual report will contain an account of a practical and inexpensive scheme for this purpose.

During the year eight certified institutions were established. The reports of the visits by the Board to the various institutions are given in full, and contain a considerable amount of information interesting to those specially concerned in the administration of the Act.

As stated at the outset, there is little in the report affording a basis for criticism, and in the present stress of work thrown on the Board, it would be unfair to expect any of the new departures in the treatment of the insane, which we may hope may be dealt with when the country again enjoys the opportunities of progress afforded by a lasting peace.

Part III.—Epitome of Current Literature.

1. Physiological Psychology.

The Nature of Mental Process. (*Psychol. Rev.*, May, 1917.) Carr, Harvey.

The author proposes the view that the mental functions with which psychology is concerned are in reality psycho-physical and at times neural, and that psychology must attempt to comprehend these functions in their entirety. That is to say that psychology must not be content to deal with the conscious and subjective elements of psycho-physical events, leaving their neural correlates to physiology, but include within its domain all the neural events involved. This, Carr points out, is unorthodox as a definition of the scope of psychology, but is entirely in

harmony with the prevailing biological point of view. The new definition of the mental permits a restatement and solution of the mind-body problem more in accordance with common sense, the distinction of mind and body being regarded as "merely a distinction of two systems of organic function."

Carr remarks that the subjective conception of mental process constitutes an inadequate tool for the physician who attempts to comprehend physical disorder. To diagnose a case as "purely mental," and to give the impression that it could not in any way be stated in neural terms, is "a crude and preposterous conception." But, unlike Watson and other critics, Carr is inclined to put the blame less on medicine than on psychology. Medicine has merely accepted current conceptions set up by psychology, which has introduced into medicine old philosophical problems regarding the relations of mind and body. These old problems vanish at once if we assume that the disordered mental functions are in reality psycho-physical events.

This psycho-physical conception of mental process, the author claims, offers a mediating point of contact for the two extremes of subjectivism and behaviourism. It permits mental processes to be studied from the standpoint of immediate experience, or of objective observation, or of clinical data. It differs from subjectivism by allowing an objective method of approach. It differs from behaviourism by admitting that the study of conscious data can give much useful information. Behaviourism, logically defined, includes the whole field of organic function. But psychology should be content with a more modest programme, still allowing a place beside it to biology and physiology. The parallelism of mental and physical still remains as a working hypothesis, but it is the total activity that becomes the object of study; the dichotomy involved is not one of process but merely of method of approach.

There are no immutable boundaries between sciences. A science must take up whatever is pertinent to its primary interest. If mental acts are a means of organic adjustment they must be studied. If neural events are an essential part of the act, they, too, must be included.

HAVELOCK ELLIS.

2. Clinical Neurology and Psychiatry.

The Voltaic Vertigo Test in Epilepsy [*Le Vertigini Voltaiche negli Epilettici*]. (*Rivista di Patologia e Nervosa e Mentale*, October, 1917.) Bonola, Dr. F.

In epilepsy, the writer remarks, vertigo, as a subjective state, occurs rather frequently, either as the aura or as a symptom.

The vertiginous sensation represents an illusion of the failure of our static relations with our surroundings; a momentary suspension, in other words, of that complex of the sensations of the orientation of our body which is furnished to us principally by stimuli transmitted to us from the semicircular canals and the vestibule, and secondarily by visual sensations.

The very important part played by the semicircular canals and the vestibule in our static sense is proved by observing either the results

of direct stimulation of these organs, or the failure of specific reaction when they are imperfect. In fact, the compensatory movements (nystagmus, rotation, and inclination of the head), which are observed in men and animals undergoing the tests of rotary vertigo and of voltaic vertigo, are not observed in animals deprived of the semicircular canals, nor in men suffering from profound lesions of the labyrinth. The vertiginous sensations which are put in evidence by the rotary tests (Barany), or by tests in which the galvanic current is employed (Babinski), have, therefore, origin in an irritation of the semicircular canals, an irritation which translates itself objectively by the compensatory movements referred to above, and which Ewald has demonstrated to be of a purely reflex origin.

The nervous terminations in the semicircular canals and in the vestibule are stimulated in the ordinary way by displacements of the endolymph, and these stimulations are perceived by us as alterations of our position in space. In the case of rotary vertigo, the vertigo is also produced by movements of the endolymph; in the case of voltaic vertigo by the current; and in the case of the vertigo, which accompanies inflammatory conditions of the internal ear, by the propagation to the nerve of the pathogenic stimulus; in all cases the nerve responds to the stimulus by its own peculiar form of irritability, which is translated in its sphere of cortical projection by the sensation of movement, of vertigo. Experiment has demonstrated that the character of the vertiginous sensation varies with the localisation of the stimulus in the different semicircular canals and in the vestibule.

The commonest and safest methods of experimenting on the vestibular labyrinth are the test of rotation, and that of the voltaic vertigo of Babinski. The writer prefers the last, because it is easier and more sensitive than the other, and because the results are more sure, more constant, and more demonstrable. The technique is as follows: The electrodes (of 2 to 3 cm. diameter) are applied in front of the tragus, and the circuit is closed. If the labyrinth be normal, with a current of from 1 to 4 milliamperes, there is an inclination of the head constantly towards the positive pole, whatever be the direction of the current, a sensation of vertigo more or less intense, and often a rotary nystagmus directed towards the negative pole. If the current be increased, there is also an inclination of the whole body towards the positive pole.

If there are bilateral vestibular lesions, there is an exaggeration of resistance which may reach to 15 or 20 milliamperes, and may even surpass them, there is a remarkable delay in the appearance of the vertiginous sensation, there is a failure of the inclination of the head towards the positive pole, which is often replaced by a movement of the head backwards or forwards, and there is an almost constant failure of nystagmus. If the lesion be unilateral or chiefly on one side, one observes a constant inclination of the head to that side, whatever be the direction of the current. Also, after the test of voltaic vertigo, one often observes alterations in the test of the index of Barany, and lateral deviation of the body during walking, reactional movements caused by the cerebellum under the influence of labyrinthic excitement.

After devoting some paragraphs to the most recent views of the anatomy of the vestibular nerve, its origin, and connections, the writer proceeds to speak of the results of his experiments.

The test of voltaic vertigo was applied to thirty-two patients suffering from so-called essential epilepsy, and in five cases opportunity was taken of repeating the experiment within six hours of an epileptic attack.

The writer employed the following as control cases.

Three patients suffering from cranial injuries without osseous lesions, but who suffered from epileptiform attacks and vertiginous sensations.

Two patients suffering from convulsions of a clearly Jacksonian type.

Two suffering from uræmic intoxication with convulsive attacks.

Twenty soldiers, sixteen of whom suffered from attacks of what the writer has elsewhere described under the name of "convulsive states of neuropathics," and four of whom suffered from typical hysterical convulsions.

The test in the control cases gave the following results :

(a) In two of the three patients suffering from cranial injury there was a remarkable increase of the vertigo, and a very great resistance to the appearance of the compensatory movements, accompanied in one by a constant inclination of the head to the right, and in the other of the head backwards.

(b) In the two uræmics and in the two patients suffering from Jacksonian convulsions (without any sign of intracranial injury) the vertigo was normal.

(c) In the cases of the sixteen soldiers suffering from organic convulsive attacks, but not epileptiform (convulsive states of neuropathics), the sensation of vertigo was rather accentuated.

(d) In the four hysterical cases the vestibular reaction was normal.

With regard to the thirty-two epileptic patients, the writer gives a very careful account of his observations, which are arranged in seven categories. Briefly, it may be said that in no case was the reaction to the voltaic vertigo normal. In the epileptics with a vertiginous aura, the vertigo was very much stronger than in the other subjects. In the hours immediately succeeding (within six) an attack the voltaic test produced a sense of vertigo much less accentuated than at a later period. In no case did the voltaic test produce an attack of epilepsy. It may be added that none of the thirty-two patients presented any alteration of any importance of the cochlear labyrinth or any other parts of the ear.

The writer considers that the alterations, which he has observed in the vestibular labyrinth of epileptics, are very difficult of interpretation. They may be interpreted as phenomena of pathological hypo-excitability, materialising, perhaps, in sclerotic processes, which the writer can only associate with the disequilibrium of the blood-pressure and that of the cerebro-spinal fluid so frequent and so serious in epileptics. This disequilibrium, through the communications existing between the cavities of the labyrinth and the intra-arachnoid spaces, and through the vessels of the membranous walls of the labyrinth, may have a

dangerous *contre-coup* on the delicate terminations of the crests and acoustic maculæ of the vestibular nerve, and go a long way to produce the sclerotic processes, of which very likely the alterations of the voltaic vertigo are the exponents.

J. BARFIELD ADAMS.

Emotional Hysteria [L'Isterismo Emotivo]. (Annali di Neurologia, Anno xxxiv, fasc. 3.) D'Onghia, Dr. Filippo.

At the commencement of his paper the writer draws the reader's attention to the fact that Neri did not meet with any of the ordinary phenomena of hysteria among the 2,000 survivors of the earthquake at Messina whom he examined.

Very often, he remarks, hysterical manifestations are caused by trifling emotions and even every-day annoyances. The lady, who will fall into convulsions on account of some miserable quarrel with her husband, will very likely the next day, when something really tragic occurs in her life, find all the energy that the situation requires, and will put aside her hysteria.

An earthquake occurs unexpectedly. Frequently it arouses an individual from his sleep, and permits only of one thought, that of saving himself. Nothing artificial can prevent the accomplishment of this one aspiration. It is not possible that the nervous energy, which is absolutely necessary to the organism at that supreme moment of peril, can remain useless in a paralysed limb which prevents the individual from saving himself, or in a tongue dumb and silent, which prevents him from crying aloud for assistance. "It is not possible, above all, that another personality, an inferior and encumbering personality, should substitute itself for, or overcome the first and true (personality) and subdue it."

"War, on the other hand, and especially the war of to-day, is such that the nervous resistance of the individual is put to a very hard proof."

"During the long hours in the trenches, with limbs cramped by the uncomfortable position and suffering from excessive cold or excessive heat, when the surrounding silence is only broken by the distant roar of cannon and the nearer rattle of musketry, by the groaning of the projectiles of the former and the whistling of the bullets of the latter, and finally, by the moans of a comrade, who, while moving to satisfy some need, has been wounded to death by some invisible enemy sharp-shooter, that is the time and the manner in which the nervous tendencies of an individual acquire consistency and colour. And when, at an ill-omened moment, the cannon thunders louder, and the roaring is followed by a howling that shakes and overturns everything, what marvel that this latent tendency, this potential neurosis, I might say, is translated into an actual neurosis?"

"Here, also, the danger is imminent, and no one, unless he be in the fulness of health and strength, can sustain it; but, contrary to what happens in an earthquake, the neurosis itself may be the means of the salvation of the individual, by bringing about his removal to the rear."

"The idea, I know, is neither new nor strange; but meanwhile it seems to me that it may be the fundamental point of the question, that it creates a true psychological contrast between the survivor from an earthquake and the soldier in a war. It is the pathogenesis itself of hysteria which offers us the explanation of the phenomenon."

"Each one of us possesses two personalities which, in normal conditions, co-operate harmoniously in our conservation and in our well-being—consciousness and subconsciousness. In hysteria the second sometimes usurps authority over the first, and causes the well-known morbid manifestations, which may succeed in encumbering the life of the patient. But when the actual existence of the patient is menaced, the two personalities recover themselves and unite their energies in common defence. We all know that hysterical symptoms, previously rebellious to every form of treatment, disappear in the moment of peril; the paralytic recovers the movement of his limbs, the dumb regains his speech, the blind his sight, etc."

"But if these morbid manifestations, which previously constituted an obstacle to the free activity of the patient, can become, in some contingency, useful and beneficial to him, the subconsciousness does not hesitate to reproduce them, feigning, I might almost say, for its own sake, a set of morbid symptoms, which may be the only means of saving the individual by removing him from the place of peril."

"Then the conclusion to which we must come, will be, I believe, rather different from that at which Babinski and Dagnan-Bouveret have arrived; that is to say, it is not so much the intensity or the quality of the emotion which determines the appearance of the symptoms of hysteria as the conditions in which the emotion is produced, and the utility, more or less, which the individual may derive from the neurosis which his subconsciousness charges itself with placing on the scene."

The paper is illustrated with reports of a few cases in which hysterical symptoms manifested themselves among wounded soldiers. Dr. D'Onghia explains the paucity of the cases because, being attached to a field hospital, few such came under his care, as patients suffering from nervous and mental diseases are removed as soon as possible to hospitals in the second line.

J. BARFIELD ADAMS.

The Mechanism of Paranoia (Journ. of Nerv. and Ment. Dis. April, 1917.) Abbot, E. Stanley.

The author points out that cases diagnosed as paranoia have rapidly diminished during the past half century. Before that period the mere presence of delusions was often considered sufficient justification for the application of this label. But in 1904 Kraepelin estimated the proportion of cases of paranoia as only 1 *per cent.*, and by 1915 had still further reduced it. Abbot believes, however, that there will remain an irreducible minimum of cases showing elaborated delusions with the absence of all other symptoms except such as are wholly secondary. After describing such a case in detail he considers the mechanism of such cases generally.

Man has to adapt himself to the variations of his environment. To do this he must reason about it. The more accurately he reasons

about it the more successful, other things being equal, will his adjustments be. There are three ways in which he may fail: (1) He may be ignorant, as we all are, more or less; (2) he may be mistaken; (3) he may be prejudiced, and apt to associate feelings that are unjustified, or too intense, or both, with certain groups of new ideas, so that when the ideas come into his head the train of thought is determined by the associated feelings, as we may see among politicians who regard politicians of the opposing party as a set of scoundrels. It is this association with feelings which makes prejudice so much more persistent than ignorance or mistake. Prejudice may even grow and become complex, as we may see in many anti-vivisectionists in whom embryonic delusional systems are found.

This mechanism of prejudice is the mechanism that is operative in all true paranoia and fully accounts for the psychosis. The apparent beginning of the psychosis is usually always an episode which arouses several strongly toned affects. These affects predispose the patient to see effects where there were none, to see causality where there was only coincidence, to take possibility for probability, or even actuality, and to ignore inherent improbabilities, or even impossibilities. But this is the mechanism of prejudice.

In ordinary normal life prejudices are limited and do not tend to become elaborated or extreme. It will probably be found that there is an unbroken series of cases extending from the simple unelaborated prejudices such as we all have, through the cynic, the optimist or the pessimist; then the anti-vivisectionist and some other ardent reformers; then religious exhorters and extreme anti-Catholics; then founders of religious sects; then unrecognised paranoiacs in private life; finally those whose anti-social acts bring them into the asylum.

The more intimately personal the subject matter of the systematised delusion is, the stronger, the more durable, the more difficult to uproot.

Paranoiacs do not tend to become demented, any more than people with prejudices. Kraepelin mentions a patient *æt.* 90, who had been a paranoiac for forty-three years but was not demented. Abbot believes, however, that the delirium may continue to grow, and that the patient's judgment and reason diminish in relation to his delusional system, while remaining good in relation to other matters. His deterioration—unlike what is seen in all other dementing psychoses—is only in the line of his delusional evolution. This fact, Abbot believes, is consistent with the mechanism he has outlined.

HAVELOCK ELLIS.

3. Sociology.

Criminology and Social Psychology. (*Medico-Legal Journ.*, April, 1917.)
Schroeder, T.

The author, a well-known New York lawyer, desires to promote "a genetic, synthetic, and practical criminology." It should also be a general social psychological method, but he considers that it is in a prison it may best be begun and worked out. First comes classification. On the basis of a physical examination all curable physical evils must be discovered and relieved at the outset. Then the subject is to be turned over to the psychological laboratory, and if there are any defects

which may be regarded as congenital removed for special training, and if he is morbidly inefficient, sent to a suitable psychiatric institutions. Among those now remaining in the prison will be found the important group of recidivists who are physically and mentally little below the average level. These require careful study, for they are symptomatic of general psycho-social disorder, and demand a sympathetic understanding. In dealing with them, "the newly conceived need for reforming the convict and restoring him to society replaces in our interest the older idea of punishment." The secret of the social inadequacy of these criminals is largely to be found in their emotional attitudes, and therefore Schroeder urges the importance of a psycho-analytic department in every prison laboratory. If sexual taboos and ignorances are found influential in determining the emotional imperatives which lead to anti-social conduct, it becomes necessary "to establish a technique for the conscious reconditioning of the desires, so as to make them progressively more mature; this should be a deliberate part of the working programme of a prison laboratory." Beyond this is the possibility of a higher synthesis in unifying the measures for the improvement of all our educational systems, so that we may advance to the discovery of the factors in social psychology which determine the criminal mind.

There are other methods which could be efficiently applied in prison. Thus, for instance, a technique might be developed for class instruction, aiming to discover and eliminate emotional conflicts, and to adapt the desires to more mature aims. This involves a new sort of sex education, dealing with emotions rather than with physical factors, and is a kind of hygiene also needed outside prisons. As, indeed, we approach the treatment of criminals with a larger vision, we shall find ourselves anxious to help them, not alone for their own sakes, but in a still higher degree as symptomatic products of unhealthy and infantile stages in our psycho-social development as a whole. In learning how to deal with the criminal we are learning how to deal with society. We select the criminal in the first place simply because the so-called normal psyche can best be studied in its exaggerations. The criminal must in future be studied with the desire to find out what is immature or inefficient in the human factor of his larger environment. Thus it is that criminology leads on to social psychology. We have to "understand and acknowledge the criminal tendencies in ourselves." Some day, the author believes, we may perhaps be able to eliminate from healthy members of society all those impulses to anti-social behaviour, only a small fraction of which are now penalised, and which may be manifested even in our desire to inflict punishment. In these and similar ways a prison psychological laboratory may be performing a larger social service, even while merely carrying on effectively its own special work.

HAVELOCK ELLIS.

4. Asylum Reports for 1916.

Bethlem Royal Hospital.—The report of this institution is less curtailed than most of the annual reports, and it contains much interesting reading. Bethlem is fortunate in having started life some

hundreds of years ago with a correct definition as the "Hospitium mente Captorum Londinense."

Most of us entirely approve of the name hospital, but probably few approve of the reason for the name, and under no condition could the existing legal definition, based as it is upon the financial condition of the patient, be held as wise, good, or valid; it seems to us a very serious defect in the existing Lunacy Act that it should implicitly hold the view that because a man is poor he should be deprived of any privilege whatever to which a slightly richer man is entitled, and that the historically unpleasant name, of Greek derivation, of institutions for the treatment of mental disease, should be specially reserved for the poor—and that because a man is poor he is not allowed to place himself under treatment for mental disease when he himself feels he requires it. Few medical superintendents can have been in office long without feeling this hardship of the poor, suffering from mental affliction. Those institutions for mental diseases that have assumed an unofficial title of a more pleasant kind have invariably, we believe, discovered that a new and better atmosphere is created, which is much appreciated both by the patients and their friends; moreover, the name itself has some effect in inducing relatives to part with their patients at an earlier date—and thus the patients come under treatment more readily; for instance, in Bethlem we find that 76 *per cent.* of the patients are admitted within six months of the declared inception of the disease; whereas, taking at random two county asylums, the proportion varies between 29 and 45 *per cent.* only.

Dr. Porter Phillips makes some wise remarks on the subject of future research:

"I feel that I must again repeat, as I have done on former occasions, that for the physical basis of the actual causation in the greater majority of these cases, we must, in future, exert all our energies in the direction of biochemistry, and, to some extent, to psycho-analysis; with regard to the former suggested research I would like strongly to recommend that when more favourable opportunities present themselves, a pathological chemist be appointed on the staff of this hospital."

As regards causation, we note that alcohol was not a very prominent factor, and that masturbation was considered to be the principal factor in producing mental disease in two cases; but Dr. Porter Phillips agrees with most other mental specialists in holding the opinion that the war has played but a small part in the ætiology of mental disease.

The recovery rate for the year under review was 59·3 *per cent.* on the direct admissions, which compares very favourably with former years, but, of course, is not in any way comparable with other institutions for the treatment of mental disease, which have to receive all types of cases.

The causes of death include one due to senile dementia and one due to dementia alone—a somewhat unusual form of classification.

Beds, Herts, and Hunts.—Dr. Fuller has been fortunate in having been able to get carried out more structural improvements than is generally to be expected during war time, and most of these were urgently necessary for the convenient and proper administration of the

kitchen and stores, the more so as this institution has been generous enough to receive on the usual terms patients from the two temporary military hospitals established at Thorpe and Napsbury.

The admissions for the year were somewhat lower than what is regarded as normal for the contributing area, on account of agencies which appear to be common to all such institutions during the present stress. Amongst the admissions, the leading ætiological factor was considered to be moral, including domestic worry and adverse circumstances (and here we note that the older classification of causes is used in the letter-press, and the newer in the table), which appeared to be potent in nearly 27 *per cent.* of the total cases, and in twenty-three cases out of 149 this particular form of stress was deemed to be the principal, essential, or chief factor. Heredity takes only second position as the ætiological factor in about 21 *per cent.* of the cases admitted, and alcoholic excess accounts for a little over 9 *per cent.*

The recovery rate was 42·4 *per cent.* on the direct admissions, and of these recoveries it is particularly noteworthy that one case is indicated of recovery after a mental illness of nearly fourteen years, a case which might fairly give cause for serious thought to a Divorce Commission contemplating drastic reform in case of mental disease in one or other partners in marriage. Amongst the recoveries another interesting case occurs of recovery in a male general paralytic, and in this connection it would be interesting to know whether this was a case really yielding to active treatment by some of the newer remedies administered intravenously or intramuscularly, since we know that this treatment is in so many cases quite disappointing in such advanced cases of lesions of the nervous system and, so complete and deceptive are the remissions in these cases, that the greatest caution is necessary in deciding that recovery has actually occurred in any given case.

The mortality for the year was 11 *per cent.*, and of the total number of deaths 36 *per cent.* were due to some form of tubercular disease.

In the midst of all the troubles and administrative anxieties of an overcrowded and understaffed asylum, and all the other difficulties incidental to war time, Dr. Fuller was unfortunate enough to be hampered in addition by several puzzling and elusive cases of, fortunately, isolated foci of enteric fever and diphtheria.

Essex County (a) Brentwood.—Dr. Turner continues his very valuable record of the clinico-pathological and pathological work during the year, and it is to be hoped that this work, which represents the skilful and detailed observations of a highly-trained clinician and pathologist, will at some later date see light in a different form more accessible to pathologists generally. The work as reported is in itself so condensed that it hardly lends itself to review in an adequate form in the space at our disposal; a few points, however, may be referred to.

Sclerosis of one or other (in one case both), cornu ammonis. This was found in the proportion of 37·5 *per cent.* of males and 36 *per cent.* of females suffering from epilepsy, chiefly in the congenitally defective.

As regards his continued observations on the presence or otherwise of the sulcus lunatus and the stripe of Gennari, Dr. Turner remarks that—

"These results do not lend much support to the idea that a greater stretch of stripe on the external surface of the cerebrum and the presence of a sulcus lunatus are signs of degeneracy."

Subdural hæmorrhages were noted in only one male case, and they occurred in no single case of general paralysis (male or female). Pachymeningeal hæmorrhages certainly appear to be less commonly found at *post-mortem* examinations than they were years ago, and the reason may be attributable to some change occurring in the course of the disease.

As regards the presence of gliosis, the findings of which Dr. Turner shows in a table, he draws the following conclusions:

"These results, drawn from this year's findings only, are quite in accord with those of previous years. So that speaking from the study of a fairly wide field of cortex—from a large number of cases—there does not seem to be any warranty for the statement so frequently repeated in text-books, and generally given on the authority of Alzheimer and Mott, that gliosis is a pathological feature characteristic of dementia præcox."

Colloid bodies, which are so commonly seen in certain types of cases associated with degenerative changes, he found in a peculiar form, observed chiefly in cases of Korsakow's disease. This consisted in the deposition of an enormous number of these bodies in the immediate neighbourhood of the vessels in the white matter at the tip of the temporal lobe.

The pathological report contains much more that is both interesting and valuable, and excerpts, taken at random, give but a poor idea of the amount of work involved and the extreme and minute care taken in this laboratory; the report should, however, be read by all interested in the pathology of mental disease.

The recovery rate calculated on the direct admissions was 21·6 *per cent.*, which suggests that Dr. Turner uses great discrimination in the use of the word *recovery* in mental disease. The death-rate was 17 *per cent.* on the daily number resident, and of the deaths about 12 *per cent.* were due to pulmonary tuberculosis.

The administration of the institution must have been during the past year no light task, seeing that ninety-nine members of the staff of all kinds have joined the forces, and this includes departures from the medical and clerical staff, one head attendant, two head nurses, and an assistant matron. We should like to congratulate Dr. Turner on maintaining his high standard of work under such difficulties.

Essex County (b), Severalls.—Dr. Turnbull feels, like many under similar circumstances, some of whom have even entirely suppressed their annual reports for the duration of the war, that it is difficult, and perhaps out of place, to present a report at any great length, but deplores the difficulties of administration under the conditions, in which, as he says: "The normal routine of asylum life has to be modified daily in process of adjustment to altering circumstances."

Having already suffered from the invasion of the military at an early date, his difficulties then became acute in finding accommodation for the influx of patients from Napsbury, Wandsworth, and Norwich City, amounting to 429 in all. How this was met is told in the Commissioners' report:

"Owing to the arrangement that had to be made in order to receive additional patients from other asylums it has been found necessary to use one of the wards on the male side for female patients, and to accommodate the displaced male patients a new ward has been formed containing thirty-nine beds. An annexe to this new ward has also been contrived by using the committee rooms and offices on the first floor over the main entrance as day-rooms and dormitories, etc."

The Commissioners' report also contained some interesting suggestions. It is somewhat extraordinary to read recommendations in the case of an asylum so recently built as this of "outside staircases to west ward on the female side and 13 ward on the male side, which at present have no second exits for use in case of fire." And, again, as regards the recommendations of the provision of verandahs attached to all the hospital wards, it seems difficult to understand why they are not compulsorily embodied in all original plans nowadays, so that they would form part of a coherent scheme, rather than adapted excrescences of modified convenience; in addition, committees are apt to resent being instructed to add what are called essential structures to institutions almost immediately after the original plan is completed.

The admissions for the year numbered 724, including transfers, as mentioned above, and the percentage of recoveries on the direct admissions was thirty, the death-rate being as low as 9.5 *per cent.*, the deaths from tuberculosis not being high.

Dr. Turnbull, like many others, has not been able to escape the penalty of overcrowding, which showed itself in the form of an outbreak of scabies, and latterly of enteric fever.

In the financial portion of the report it is noted that, under the heading "Other payments," the details of which are set out in full, an item occurs showing payment of "fees for recertification of patients." Assuming that this refers to "lapsed certificates," it appears to establish a principle previously in doubt, and one frequently not admitted by local government auditors.

Royal Eastern Counties' Institution, Colchester.—The report of this institution shows an excellent record for the year. The average daily number resident was 498, a considerable increase, in part probably due to the incidence of the Mental Deficiency Act, and the greater activity of local authorities in these matters, 86 cases having been received during the current year under review; of these only 18 were under 10 years of age, and the average age was as high as 14½; it seems a pity that the more educable of these should not come under the care of the authorities at an earlier age seeing the excellent training facility here provided. An idea of the mental standard and qualities of those admitted is shewn by the classification which Dr. Turner gives:

Twenty-two high-grade cases.

Seventeen fair and promising cases.

Nineteen not promising, not containing material that may be improved with education.

Twenty-eight hospital patients incapable of education.

Giving the satisfactory proportion of some 67 *per cent.* capable of benefiting by the training school.

The above form of classification has the merit of being intensely

practical and indeed necessary, but one must confess that reading the report from a medical point of view one would like to hear some details of the fundamental types of idiocy and imbecility in each group.

Great praise is due to Dr. Turner for the personal and detailed care in which the cases are graded for educative purposes, a matter which requires a considerable degree of knowledge and experience. The following extract concerning the working of the Peckover schools and shops portrays something of the plan adopted :

"Undoubtedly we have striven to keep the school work and methods of training up-to-date; we have adopted new ideas wherever they seemed good, though it must be confessed the new ideas are sometimes only old methods revived or in a little different dress. The children who go to school are divided into four classes, though each class is subdivided at least once. In the upper classes ordinary school subjects are taught in the morning, combined with plenty of practical object-lessons and drill, and in the afternoon all classes do some kind of manual work. Girls and boys are mixed in the same class for the morning subjects. This has enabled us to grade the different patients much more evenly than if the boys and girls were kept in separate classes. A particular patient can be thus placed in the class to which he or she belongs by reason of their mental abilities, and no attention need be paid to the question of sex. For the afternoon session the patients are again regraded, some of those who are in the first class for manual work may be much lower for ordinary school subjects. The lower classes take manual work both morning and afternoon. Some of the teaching in these classes is very simple, but one is often surprised at the results. I have had a large number of blocks and bricks of all sizes and various shapes made in the carpenter's shop. These have been painted different colours, but each colour has been made as bright as possible. One of the drawbacks to the Montessori apparatus in my opinion is the absence of any bright colouring. There is nothing to strike a defective child's imagination. Any patient who improves sufficiently is at once put into a higher class."

That this education results in an improvement of real practical value is shewn by the following paragraph from Dr. Turner's report :

"The work in the training shops has fortunately gone on throughout the year without interruption. I have already mentioned how much the institution is indebted to the carpenter's shop for the furnishing of the new house on East Hill. The wood-carving shop has suffered more than most of the shops. Suitable wood cannot be obtained, and even if it could, people are not disposed to buy articles which may be called luxuries. Many of the best wood-carvers have been drafted into other shops where the work is more strictly utilitarian. The brush shop has turned out many hundred more brushes than in any previous year. In addition to private orders the brush contracts for two large asylums have been obtained, and the shop has had to work at high-pressure throughout the year. All the frocks, suits, and uniforms required for clothing the patients and staff have been made in the institution, as well as the greater part of the underclothing for the patients. We have been enabled to do this, because the girls' workroom now contains a large number of higher grade young women, who do good work in this way. When the new workroom is built we ought to make and repair everything that is wanted in the way of clothing. The number of jerseys, stockings, and socks knitted on the machines has increased by nearly 100 *per cent.* Five thousand five hundred pairs of boots have been repaired in addition to the new boots made. The mat shop has had plenty of work throughout the year. The excellence and durability of the mats made by the patients is now so well known that there are always plenty of orders. The basket shop is not so well known, and we could put through more orders than we receive for baskets and hampers. The elder girls have been of great assistance in the laundry, and have enabled us to do without that increase in laundry staff which would otherwise have been necessary; indeed, the number of paid hands in the laundry is now one less than when the number of patients was half the present figure. The farm has had an excellent year. The value of the

farm to the institution is very evident at the present time, and more land would be a great advantage, not only from the point of view of supplies, but because it provided good work for the stronger patients."

Both the ordinary death-rate and the tubercular death-rate was comparatively low.

City of London.—This report, like so many more, is so seriously curtailed that a great deal that is generally interesting in it fails to come under review.

This institution has given accommodation to a considerable number of patients from Napsbury and St. Luke's Hospital, but nowhere do we find Dr. Steen complaining of overcrowding, nor in the report is there any sign indicating a condition prejudicial to the general health of the community; indeed, except for a small outbreak of influenza, the year under review appears to have been remarkably free from epidemic disease. Forty-five members of the staff were absent on military service, but the remainder of the staff appear to have risen to the occasion demanded of them, and the Committee are able to express their high appreciation of their work.

The admission rate for the year was 169, but owing to the absence of the ætiological table there is no information as to causation. The average for the previous ten years was 143, and the previous five years was 135; there was, therefore, some enhancement in the admission rate for the year, though Dr. Steen clearly is of opinion that the war and its concomitant conditions do not at present, at any rate, produce any appreciable effect on the community in this direction.

"To sum up: there are so far no evidences that there has been any increase in insanity during the past two and a half years, and it is highly probable that there has been an appreciable decrease,"

and this is the conclusion gained from a perusal of most of the asylum reports in the country.

The recovery rate for the year was 32·4 *per cent.*, and the death-rate as low as 7·4 *per cent.*; the usual death-rate, however, of this institution is lower than the average of the counties generally, which we understand Dr. Steen attributes partly to the excellent site and subsoil, partly also no doubt to the very extensive use of the verandah system.

In the farm balance-sheet, we note that although "cartage done for the asylum" is represented, and "value of pig-wash" is charged for, for some reason there does not appear to be any charge made for the labour of patients, which in many institutions, at certain times of the year particularly, is an important item, and in these days of increased wages still more so. It is difficult to assess this really accurately on account of its fluctuating quality and quantity; it is generally considered, however, that an approximate estimate should be made to give greater correctness to the farm account for comparison with non-asylum farm accounts.

Borough of Middlesbrough.—The Borough admissions for the year 1916 were 66, which showed a decrease of 13 as compared with the previous year; the total direct admissions were 83 and the indirect 6, and from a table shown by Dr. Geddes, the proportion of certified

insanity of the poor class, to the population of the Borough, has risen from 1 in 517 in 1894 to 1 in 408 in 1916, the population itself having risen from 75,532 in the former year to 125,718 in the latter.

The recovery rate is stated to be the "very satisfactory one of 49·4" calculated on the direct admissions. It is very remarkable to notice in the different annual reports what each medical superintendent regards as a satisfactory recovery rate; at the one end of the scale we find Dr. Whitwell referring to 15·8 as a satisfactory recovery rate, and from this, through the whole gamut, culminating in a recovery rate of 50 *per cent.* and over. The question really is, are we to do our best to achieve a scientific standard to represent recovery in mental disease, or are we to accept the lay or legal view, namely, that a man is recovered when he appears to be, according to the understanding of the uninitiated? The public, though they may be stupid in the matter of mental disease, cannot help noting the large number of "recoveries" that are continually coming back to asylums (for instance, in one series of asylums during a period of sixteen years the returned "recoveries" amounted to nearly 30 *per cent.*), and the result of these observations made by the public is that many of them are beginning to think that they are quite as well able to form an opinion in this matter as the mental expert. On the other hand, we have the remarkable and curious fact that according to the existing Lunacy Law there is not anything called "recovery" of poor (pauper) patients, but only according to Sect. 83, of patients in hospitals or licensed houses. Again, it is very seriously implied by that Act that after all, the final court of appeal as to a man's mental condition is not the doctor but the layman. If, then, we are to accept the idea that a man is recovered, the moment he has ceased to be certifiable, not only by the doctor but by the layman (Sec. 38 (6) *b*), then a high recovery rate is not only inevitable but dreadful; but if we are to accept the undoubtedly more scientific, and probably more correct, view that though many patients appear to the uninitiated to be well mentally, much fewer really recover, then the high recovery rate must go, and the low one rule, which to some people would seem appalling.

The death-rate for the year was 10·3, and the deaths included one unusual case from shock following the reduction under an anæsthetic of a dislocation of the hip-joint sustained in an epileptic fit.

County of Salop and Borough of Wenlock.—Although the dissolution is now complete between the counties of Shropshire and Montgomery so far as mental disease is concerned, the Asylum at Bicton still continues to receive Montgomery cases, the current receptions under contract at 21s. per week and some of the residual cases at 14s. per week, it seems probable that the general increase in cost of everything will shortly render the latter figure untenable from a business point of view. The number of patients at present in the Asylum, owing to the dissolution of the Counties, is practically the same as obtained thirty years ago, as is shown in an interesting table of the population movements since the year 1876. Dr. Hughes also shows the ratio of the insane to the population in the various contributing Union areas taking the 1911 census as a basis, from which it appears that the more purely agricultural areas, such as Drayton for instance (1 in 588), tend to have

the smaller proportion of mental diseases ; this seems to suggest the absence of that serious depletion of the country for the supply of the urban areas, which sometimes occurs. The borough of Shrewsbury shows the highest ratio, namely 1 in 280, the corresponding figures for England and Wales being at present 1 in 266.

The admission rate for the year was lower than usual ; owing, however, to the great reduction in the statistical tables, and as in other asylums the general volume of the report, there is nothing to be gleaned as to the relative value of the causative conditions in operation. The recovery rate was 41.4 *per cent.*, calculated on the direct admissions, which must be regarded as a high one from an institution which takes every kind of case without selection. The death-rate is remarkably low, namely, 8.9 on the average daily number resident, 17.9 *per cent.* being due to some form of tuberculosis.

Dr. Hughes is to be congratulated on the loyalty of his subordinate staff who so readily assumed the extra work thrown upon them by war conditions, since he is able to report that married men, artisans, and tradesmen willingly and readily consented to take turn to sleep in the asylum if and when necessary, artisans and tradesmen in addition volunteering to undertake ward duties after their working hours, an unassuming and useful form of patriotism which might to advantage be emulated in other walks of life.

Warwick County.—Dr. Miller received during the year 224 patients of both sexes, from Rubery Hill, Hollymoor, and Northampton Asylums, which had been converted into temporary military hospitals ; the normal number, for which accommodation is provided, is not shown in the report, but it is readily seen that this great influx caused considerable overcrowding, which had indeed already been in existence, as it was referred to in the report of the previous year. At Warwick County Asylum they are unique to some extent in having such a considerable area of covered airing-court which they were able to use successfully as a dormitory for male patients, ninety patients having been comfortably housed there for the past one and a half years. The great diminution of the staff (seventy-six of whom are on military service), together with the sudden great increase of patients, necessarily, as in other similar asylums, limited the freedom and liberty of the patients, though judging from the very satisfactory and healthy state of the farm account, the patients must have been fully employed in farming operations, and Dr. Miller was even able to assist neighbouring farmers by the loan of patient labour.

Amongst the admissions we note there was a larger proportion than usual of congenital cases ; this is a thing which is disappointing to most medical superintendents, who had hoped that with the advent of the Mental Deficiency Act they would have been relieved of this particular class of patients for which they, as a rule, have no suitable accommodation, and for whom they have no means of training. It is, of course, true that under present circumstances the provisions of the Mental Deficiency Act cannot be carried out, and to all intents and purposes it is in abeyance, but in many counties the medical superintendent of the county asylum is not in such close touch as he should, in our opinion,

be with the Mental Deficiency Committee, whose official adviser, we believe he undoubtedly ought to be (and sometimes is). The result is that the Mental Deficiency Committee in some cases deliberately and of intention takes advantage of Sec. 30, ii, of the Act, to shirk any responsibility of dealing with cases that have been touched by the Poor Law, although in the summary of the report of the Royal Commission upon the Care and Control of the Feeble-minded it is definitely stated that "we have come to the conclusion that intervention by the Poor Law in the case of mentally defective persons should be based on the principle that such persons are suffering from mental incapacity," and in the Mental Deficiency Act it is clearly intended that the county asylum should not be utilised for the disposal of inconvenient imbeciles in the workhouse, since provision for their removal or transfer occurs in Sec. 16 (II) to an institution for defectives. Unfortunately, however, under Sec. 341 Lunacy Act, 1890, the term lunatic means "idiot or person of unsound mind," and thus unless proper direction be given to the actions of Mental Deficiency Committees when the Mental Deficiency Act comes into actual being and force, there would appear to be a possibility (if nothing more) of a repetition of some of the defects of the Lunacy Act of 1890, in that the poorer class of cases will be deprived of opportunities of education and treatment to which they are justly and rightly entitled. Warwick County Asylum has already resident 200 congenital cases.

The total admissions for the year were 230, and as to causation, "stress either sudden or prolonged" is assigned as the cause of the attack in a large percentage of cases, though owing to the necessary shortness of the report there is no table to show whether this was regarded chiefly as a principal or contributory factor. Alcoholic excess as a factor of either kind only occurred in a little over 5 *per cent.* of the admissions. The recovery rate was 33 *per cent.* on the gross number of admissions. The two largest factors in the death-rate were senility and tubercular disease, the latter accounting for 19.8 *per cent.*, and of this Dr. Miller observes:

"The deaths due to tuberculosis and pneumonia are more numerous than in previous years. This will no doubt be found to be the case in all overcrowded asylums. There has been much inevitable overcrowding in this asylum, a factor which in my experience has had marked influence on the incidence of the diseases mentioned, and our dietary has of necessity been considerably reduced, which also has no doubt tended to diminish resistance in constitutions already enfeebled and prone to disease."

Royal Edinburgh Asylums, Morningside.

There is much to be learned from the Scottish institutions as regards the grading of patients, so that a man may not necessarily become what is called "a pauper" from the mere fact of losing his earning power through mental disease, any more than he does by entering a public hospital for bodily disease, unless in fact he really is poor to the degree of practical destitution. Thus at Morningside we find accommodation for private patients providing their own clothing at a sum as low as 15s. 4d. per week, for intermediates at 19s. 9d. per week, and rate-paid at 16s. 1d. per week, and it is certain that many of these former classes in an English county would of necessity be classed as rate-paid or—

unfortunate word—pauper patients. Moreover, in order to maintain these figures as low as possible, consistent with the high cost of living, the Board of Managers resolved to suspend in the meantime the operation of the Sinking Fund, so far as repayment of debt is concerned, and to increase the rates of board only to such an extent as to provide an income sufficient to meet ordinary expenditure. But Morningside is fortunate in having excellent charity and benevolent funds for the assistance of the less fortunate. On these, however, in the year under review so great was the call that the expenditure exceeded the income.

The total number of cases admitted during the year was 424. Owing to an unfortunate printer's error in Table I it is not quite clear exactly what proportion of these were first admissions, but approximately 344 is the number, therefore the figures do not show any increase of insanity in the contributing area.

On the subject of ætiology, Dr. Robertson speaks strongly of alcohol as an exciting cause amongst the admissions for the year, but concludes from the figures that during the year under review there has been slightly less drinking to excess amongst men and slightly more amongst women, but, on the whole, less than during the past few years.

"There is no doubt whatsoever that the amount of alcoholic insanity admitted has been decidedly less since the war began than in previous years, and there is no evidence in the statistics at my disposal that women since then have been drinking more."

This is an observation of considerable importance, having in view the great prevalence of loose statements on this subject and especially calling to mind the fact that the above result has been achieved in an area which has not been under that strict Government control which is said to produce such beneficent results. Syphilis seems to have been a definitely determined cause in 14.7 *per cent.* of the cases of insanity occurring amongst men.

"In other words, one in every seven men suffered from irrecoverable insanity produced by a preventible cause and by a very curable disease, provided that the remedies which medical science has discovered were made use of at an early stage by those who became infected with it. At last, however, something is to be done for its organised treatment. I would impress upon the public bodies concerned that they cannot do too much. The return, so far as the prevention of this incurable form of insanity is concerned, would not be immediate, for it does not develop as a rule till twelve years after infection, but in the end the country will be amply repaid for all outlays, whatever these may be. Leith provides a higher percentage of this form of insanity, in comparison with its population, than any other district in Scotland, and Edinburgh comes third on the list. The Inverness district, including the northern counties, comes last, with only one-eighteenth of the percentage, at the head of the list."

In the ætiological table we note that the older form of the Medico-Psychological Association is used, so that the convenient term "ætiological factor" with all its latitude is replaced by the more exacting phrase "probable cause." There are several interesting points in this table, to two of which we would draw attention, namely, a case of mental disease in which the "probable cause" assigned was masturbation as a predisposing factor, and another of cancer of the breast, in a similar relationship. By predisposition, one generally means not really

a cause but an initial and sometimes innate condition resulting in less resistance to a stress which we may call exciting or precipitating ; predisposition to an end is thus a state of equilibrium of less stability than normal, but of varying degree. It is not, therefore, easily conceivable that an act such as masturbation, or a condition such as cancer of the breast, should be a predisposing cause ; in each case there must have been a chain of events preceding them, of which this particular event is but a terminal incident of comparatively small import. Such incidents may, of course, be terminal factors, or in the one case a mere symptom—whether they ever rank as “predisposing causes” is certainly open to doubt.

Dr. Robertson gives some well-timed and temperate remarks on the subject of spiritualism and its relation to mental diseases ; he regards the publication of *Raymond* as lamentable, a view accepted by many, and shows how dangerous spiritualism may be to those of neurotic temperament.

“I would remind inquirers into the subject that if they would meet those who are hearing messages from spirits every hour of the day, who are seeing forms, angelic and human, surrounding them that are invisible to ordinary persons, and who are receiving other manifestations of an equally occult nature, they only require to go to a mental hospital to find them. It is true that the modern physician, by a long study of these phenomena, has come to regard them as symptoms of disease, and has renounced the doctrine of possession by spirits, though it had the double merit of simplicity and of antiquity to support it. If honest mediums do exist who hear inaudible messages or feel communications without words, or see forms invisible to others, the mental physician accustomed to ‘symptoms’ is inclined to regard their ‘gifts’ as being, if not morbid, at least as closely related to the morbid, with no element of anything ‘occult’ about them.

“I desire to warn those who may possibly inherit a latent tendency to nervous disorders to have nothing to do with practical inquiries of a spiritualistic nature, lest they should awaken this dormant proclivity to hallucinations within their brains. I have known such a person who had lost her son following the procedure in vogue at present, under advice, first hearing of him through mediums, then getting into touch with him herself and receiving messages from him, some as impressions and others as audible words, then increasing her circle of spiritual acquaintances and living more for her spiritual world than for this, to the neglect of her husband and household, till finally God conversed with her in a low musical voice at all times, and confided His plans for the future to her. I would ask spiritualists where in this case does spiritualism end and mental disorder begin ? Do they overlap ? Do they exist ? Or is there such a state as disordered mental function at all ? Or is it that spiritualism was wholly absent from the case ?

“While inquiries into spiritualism sometimes lead to insanity in the predisposed, I have found more frequently that to persons suffering from the simple forms and early stages of mental derangement, the theory of spiritualism has a great fascination. It is simple—a child can understand it—indeed, it is the explanation of the primitive savage for all the actions produced by the mysterious forces of nature. When, therefore, a person suffering from the early symptoms of insanity hears imaginary voices, or experiences strange feelings and impressions, he finds in spiritualism a ready and a comforting explanation of these phenomena, and he becomes interested in the subject. However injurious spiritualism may be to these persons in retarding recovery, it would be wrong to say that it was the cause of their derangement.”

In another book on spiritualism recently published (*The Dangers of Spiritualism*, Raupert), we notice that several of the cases there set out in detail were obvious cases of crude mental disease familiar to all mental students.

Of the admissions, the melancholic form of manic-depressive insanity was predominant, the difference in the proportion of the cases in different areas is very marked, and appears at present inexplicable. Another noteworthy feature in the admissions is the somewhat large proportion of cases of "infective-exhaustive" insanity (presumably confusional insanity), namely sixty-four in 424 admissions.

The recovery rate for the year was 30 *per cent.* calculated on the admissions. In some quarters much capital has been made out of the fact that, on the figures as published of mental disease, there has been no increase in the recovery rate during the past fifty years; we would go still farther, and claim that there has been an actual diminution in the recovery rate, as shown in statistics, for this period, as almost any asylum tables will show. The fact of the matter is that our knowledge in these matters has increased, and we are now better able to differentiate between true and false recovery than we have ever been, and instead of the deduction being that the study and knowledge of insanity has not progressed, the deduction should really be that it is because the study and knowledge of mental diseases has progressed, that the recovery rate, as shown by statistics, has not increased or even become lower. In the tables before us, showing the history of the annual admissions since the opening of the asylum, it seems clear that in the earlier years, some forty years ago when the recovery rates soared to 48—55 *per cent.* on the admissions, a large number of these cases were made up of non-recovered cases; in one year the relapsed cases formed 38 *per cent.* of the total admissions, and in the preceding forty years they formed 31 *per cent.*, while in the year under review they only formed 23 *per cent.* While discussing the subject of recovery rates in mental diseases over a period the very pertinent question might with justice be asked, has the recovery rate in *any* disease of the nervous system increased greatly in the same period? The answer is in the negative, but there are keen and earnest men working at both nervous and mental disease, and those who cavil at results have forgotten Tennyson's line: "Science moves but slowly, slowly, creeping on from point to point," and clamour for immediate and dramatic developments. As regards the "ill-considered advertisements for subscriptions for hostels," which disfigured a well-known daily paper, Dr. Robertson makes some sound remarks; we ourselves challenged each statement in the paper as it was published, and were perhaps to some extent responsible for their modification in the later issues.

"In connection with the care of neurasthenic but not insane soldiers, I observe ill-considered advertisements for subscriptions for hostels, which are doing a public disservice by contrasting unfavourably the useful and excellent work done in asylums, in the advocacy of their own schemes. Practically all asylums in this country have large farms, gardens, and grounds attached to them, yet there recently appeared the suggestion, by a *suppressio veri*, that 'work on the land' is the distinctive feature of these places. There is no antagonism between hostels and mental hospitals, as both varieties of establishments are necessary for appropriate cases, and, so far as I know, no case of neurasthenia only has been sent to an asylum. The converse, however, does not hold good, for a neurasthenic officer recently sent to a home found the patient on one side of him suffering from convulsions, and a deranged patient making trenches of his bedding on the other. He would rather have been in a well-appointed mental hospital provided with ample resources of every kind and good classification."

LXIV.

7

Both the ordinary death-rate and the tubercular death-rate were low for the year.

Roxburgh District.—We miss Dr. Carlyle Johnston's hand in this year's report, and regret that his unsatisfactory health compelled him to resign an office which he had held with great credit to himself and marked advantage to the institution under his control for thirty-one years. We hope that the removal of his responsibilities will allow him to regain his health and enjoy his well-earned pension for many years.

The admissions for the year numbered seventy-one, a somewhat lower admission rate than that of recent years, which Dr. Steele points out is largely due to the diminution in the civil population by the operation of the Military Service Act. Of these admissions twenty were re-admissions consisting of patients who had mostly been intermingling with the ordinary community for periods varying from one year or less up to thirty-five years.

As to ætiology, alcoholic cases do not appear to assume large proportions, and in no case is this regarded as a predisposing factor. Adolescence and senility Dr. Steele regards as predisposing causes, an attitude we are strongly inclined to think may be the correct one if this nomenclature is used, but in one case senility is regarded as an exciting cause, and this is due doubtless to the dilemma in which the former tables of the Medico-Psychological Association continually landed us, which is avoided by the use of the terms "principal" and "contributory," which are more elastic, and give more latitude in apportioning the relative values of the factors in causation.

Dr. Steele, like most other Medical Superintendents, speaks with considerable caution as to the effect of the war and its concomitant conditions on the production of mental disease in the community.

"The admissions included two soldiers from the Army. The question as to what influence the war is having on the causation of mental disease is a difficult one, and cannot be satisfactorily answered until the number of men who have become insane whilst on active service is known. The likelihood is that there may be some, though possibly not a very marked, increase in the numbers of the mentally affected. It seems only reasonable to expect that some men of a neurotic temperament and with hereditary predisposition, who, under the comparatively quiet and uneventful conditions of peace, might have avoided a mental breakdown, may succumb to the physical and mental strain of service in the field."

The recovery rate for the year was 30.9 *per cent.* The mortality rate was 10.7 *per cent.* of the average number resident, and 20 *per cent.* of the deaths were due to some form of tuberculosis. Amongst the deaths we note the case of a female patient between seventy-five and eighty years of age in whom the cause of death assigned was purpura, we assume this was not a case of true purpura, so rare at such an age, but a case of cachectic purpura, so common in senile debility, but so rarely the actual cause of death.

Glasgow Royal Asylum, Gartnavel.—The number of patients resident in this institution shows but little increase at the end of the year compared with the number at the commencement, in fact, the average number resident has only shown minor fluctuations for many years back. The admissions for the year were slightly higher than in the previous year,

which was, however, an unusually low one. There is a very striking difference in different asylums in the United Kingdom in the proportion of male and female cases, and various explanations are given of this in different areas. Dr. Oswald points out, firstly, that the male admissions to Gartnavel have always been fewer than the female; and, secondly, that the excess of females over males, both in admissions and in "number remaining," applies only to private patients:

"for in the rate-supported class the admissions of males to the asylums of Scotland in 1915 was considerably in excess of the females, and at the close of 1915 there were four hundred fewer women than men resident. The difference is to be explained by the fact that the man is usually the bread-winner, and when he becomes ill there is no one to support him as a paying patient, whereas in the case of a woman becoming mentally affected she can be maintained, for a time at all events, by her wage-earning relatives.

"Apart from this class distinction, the admissions into all Scottish asylums in 1915 show that insanity was nearly equally divided between the sexes, the increased frequency of general paralysis and alcoholic insanity in men being balanced by the greater number of women who suffered from melancholia, or who broke down at the climacteric period."

That some slow-acting agency is gradually producing variations in the type of mental disease occurring in the community is clearly shown in many cases, though its varying degree is very striking in different areas, and it would appear to be a corollary to the proposition that evolutionary changes are occurring in the race type, and its mentality, and on this subject Dr. Oswald remarks:

"It is believed by some that mental disorders are changing in type, and that states of depression are becoming more common, and states of mental excitement less so. Acute mania—excluding that due to general paralysis or alcohol—is certainly now less frequently met with, and, among the poor at all events, melancholia, due often to an impaired physical condition, is the most common of all the psychoses. Among the educated classes delusional insanity is, however, very often the form the illness takes, and such cases are among the most troublesome of all to treat."

Of the causes of insanity amongst the admissions for the year, the largest single cause appears to be alcohol; with or without the addition of predisposing causes it accounted for 14 *per cent.* of all the admissions. Stress of various kinds is regarded as the "determining factor," with or without predisposing cause added, in another 14 *per cent.*, and here Dr. Oswald explains that in cases where more factors than one seemed to operate, he tabulates the illness as being due to the cause which, having regard to all the circumstances, he believed to be the determining factor. The table of causes which he shows is somewhat different in arrangement to the older form of that adopted by the Association, and an improvement on it—it is doubtful, however, whether the new table of ætiological factors would not be better for showing the probable relationship in the ætiology when more than one factor appears. We certainly confess to some diffidence in accepting without qualification or modification the view that senility and adolescence are in themselves the causes of mental disease, since it argues that the effect of the incidence of the adolescent period and that of senility is to produce mental disease, a somewhat difficult thesis to hold.

The death-rate was the unusually low one of 5.3 *per cent.* on the

average number resident, and the tubercular disease death-rate was practically negligible.

Aberdeen Royal Asylum.—It is probable that there are greater possibilities of refinements in classification of patients in some of the Scottish Asylums than exists in the majority of English County Asylums; the fact that this institution of a total population of 885 at the time of writing has four distinct divisions, namely,—Main Institution, Hospital, Elmhill House, and Daviot Branch is evidence of this, and possibly the relatively larger number of female nurses employed in the male division compared with the average English County Asylum is thus explained. Possibly also national temperament and type of case affect this question. In many parts of England, however, at the present time there is to be found a greater difficulty in filling female than male vacancies on the nursing staff, owing to reasons that are frequently called patriotic, but are more commonly financial and social.

“There have been many changes in the nursing staff, caused, for the most part, by the war. Every endeavour has been made to release men for military purposes, and, as far as possible, to replace them by female nurses. There are now sixteen nurses in the Male Division, occupying such positions as are considered prudent and desirable. For long it has been found that, with the aid of male attendants, they are admirably suited for the care of the sick, infirm, and debilitated patients. The unfortunate circumstance is that, at the present time, the limit to this system has been reached in this institution.”

The admissions for the year, both private and parish, show a decrease of five in the former case and forty-one in the latter, but, in spite of this, Dr. Reid points out that the admission rate is the second highest since the opening of the District Asylum in 1904, and the incidence was highest between the ages of 40 to 55.

As regards causation, alcoholic intemperance does not appear to form a prominent factor, and syphilis occupies a similar position. In the ætiological table we notice with some interest that puberty and senility are regarded chiefly as factors of an undeterminable position as regards importance, while adolescence is frequently promoted to the position of a predisposing cause. The difficulty of correctly placing these factors in their proper relationship is very great, as is shown in report after report—it seems safe to regard them as contributory factors without necessarily committing oneself to their degree of potency in each case.

Of the deaths, tuberculosis of all kinds showed a death rate of about 11 *per cent.*, and it will be remembered that in previous reports Dr. Reid has on occasion shown extremely low tubercular rates, which he attributes to the extensive use of the verandah system, and free exercise in the open air in all weathers.

Part IV.—Notes and News.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was held at No. 11, Chandos Street, London, W. 1, on Tuesday, November 27th, 1917, Lieut.-Colonel David G. Thomson, M.D., R.A.M.C. (President), in the chair.

There were present: Sir George H. Savage, Sir R. Armstrong-Jones, and Drs. T. Stewart Adair, Fletcher Beach, David Bower, A. Helen Boyle, James Chambers, Maurice Craig, R. H. Cole, A. W. Daniel, J. F. Dixon, T. Drapes, R. Eager, J. H. Earls, C. F. Fothergill, A. Hume Griffith, N. Lavers, T. S. Logan, M. E. Martin, A. Miller, A. W. Neill, Bedford Pierce, J. G. Porter Phillips, J. N. Sergeant, G. E. Shuttleworth, R. P. Smith, T. E. K. Stansfield, James Stewart, R. C. Stewart, C. M. Tuke, H. Wolsley-Lewis, and R. H. Steen (Acting Hon. General Secretary).

Present at the Council Meeting: Lieut.-Colonel D. G. Thomson, M.D., R.A.M.C. (President), in the chair, Sir Robert Armstrong-Jones, and Drs. T. S. Adair, A. Helen Boyle, James Chambers, R. H. Cole, Thos. Drapes, R. Eager, J. G. Porter Phillips, J. N. Sergeant, G. E. Shuttleworth, T. E. K. Stansfield, H. Wolseley-Lewis, and R. H. Steen (Acting Hon. General Secretary).

Dr. Bedford Pierce attended on the invitation of the President.

The following sent communications expressing regret at their inability to be present: Drs. C. C. Easterbrook, J. G. Soutar, John Keay, E. W. White, N. Lavers, H. T. S. Aveline, G. D. McRae, C. A. Crichton, W. R. Watson, and A. N. Boycott.

The minutes of the May meeting were taken as read, they having already appeared in the July number of the Journal, and signed as correct.

The PRESIDENT said he had to inform the meeting that a Special Meeting of the Council was held on September 20th for the purpose of appointing a Treasurer. At that meeting the Council, acting within its powers, appointed Dr. Chambers, of Roehampton, to be the Association's Treasurer, in place of the late Dr. Hayes Newington.

Before beginning the actual business it was his painful duty to report to the meeting the deaths, tragically enough on the same day, of two of the great pillars of this Association—Dr. Hayes Newington and Dr. Urquhart. Both died shortly after the last Quarterly Meeting. In the ordinary course it would have fallen to his duty to pronounce a panegyric on the work and worth of those two deceased members, but, opportunely, in the October issue of the *Journal of Mental Science*, there appeared an excellent account of the careers of both. Under those circumstances he did not propose to detain the meeting with any long story of the life's work of those two men: it was well known to all those present, and he felt that any words of his would be but feeble, and could not in any way supplement what had been so well said in the articles referred to. He asked the meeting to pass, by upstanding, a resolution of condolence with the families of Dr. Newington and Dr. Urquhart, which he formally moved.

The vote was passed accordingly.

In addition to those two gentlemen, death had laid its hand heavily on other members, and these losses were equally sad and deserving of sympathy. The first was that of Dr. William Graham, who was Medical Superintendent of Belfast District Asylum. Any of the members who were at the British Medical Association meeting in Belfast some years ago, and who visited the asylum at Purdysburn, would know what valuable and splendid work Dr. Graham did there. The tragedy of his somewhat premature death was described in the *British Medical Journal*, p. 674. His death was the sequel of an accident, which happened while he was still in the prime of life and energy.

Another of the deaths was that of Col. James Hyslop, D.S.O., who was Deputy Director of Medical Services of the Union of South Africa. He died at the Sanatorium, Pietermaritzburg, on October 5th, at the age of 60. He also was known for the general good work which he did in the South African States, and

for his special work in the asylum at Pietermaritzburg. He moved a resolution of condolence with the relatives of those deceased members.

This also was carried by members upstanding.

The following gentlemen were duly elected members:

McIVER, COLIN, Capt., I.M.S., M.R.C.S., L.R.C.P., c/o Messrs. Grindlay & Co., 54, Parliament Street, S.W.

Proposed by Drs. J. G. Porter Phillips, W. H. B. Stoddart, and R. H. Steen.

WRIGHT, MAURICE B., Major, R.A.M.C., M.D., C.M.Edin., Mental Specialist, Eastern Command, 118, Harley Street, London, W.

Proposed by Drs. J. C. Woods, Maurice Craig, and R. H. Steen.

Dr. Adair and Dr. Sergeant acted as scrutineers.

The PRESIDENT said a letter had been received from Dr. David Orr, of Prestwich Asylum, expressing the regret of himself and his co-author that neither were able to attend to present their paper in person, as they were unable to leave in consequence of emergency war work. Dr. Devine, a colleague of Dr. Rows, would present the paper.

PAPER.

Dr. DAVID ORR and Major R. G. Rows, R.A.M.C.: "Further Observations on Experimental Toxi-infections of the Central Nervous System" (with lantern illustrations). (See p. 18).

The PRESIDENT expressed the thanks of the meeting to the authors for having made the Association privy to the important work they were carrying out in this domain of pathology.

Sir GEORGE SAVAGE said he would like to suggest that when important and intricate scientific contributions, such as this one, were presented to the Association at its meetings, it would be a great advantage—certainly it would be to him—if a *précis* could be circulated beforehand.

The PRESIDENT expressed his agreement with what Sir George Savage had said. The suggestion would be carefully considered by the Council, and he did not doubt it would be acted upon. It was a common practice in societies which were doing scientific work, and he did not see why it should not be followed by this Association.

It only remained for him to thank Dr. Orr and Major Rows for their contribution; they kept the Association up to date with researches, and members could imagine the zeal and energy with which they were pursuing their work, at this time when everybody was working so strenuously.

NORTHERN AND MIDLAND DIVISION.

THE AUTUMN MEETING of the Northern and Midland Division was held by the kind invitation of Dr. Jeffrey at Bootham Park, York, on Thursday, October 25th, 1917.

Dr. Jeffrey presided.

The following seventeen members were present: Drs. M. A. Archdale, J. G. Blandford, A. J. Eades, J. W. Geddes, F. P. Hearder, T. Herbert, G. R. Jeffrey, W. S. Kay, R. McD. Ladell, T. W. McDowall, H. J. Mackenzie, H. D. MacPhail, S. R. Macphail, B. Pierce, M. L. Rowan, J. B. Tighe, and T. S. Adair, and one visitor, Dr. C. S. Lowson.

Several apologies for non-attendance were received.

The minutes of the last meeting were read and confirmed.

Drs. McDowall, Pierce, and Street were unanimously re-elected to form the Divisional Committee for the ensuing year.

Dr. Bedford Pierce gave some notes of an interesting case he had had under his care of a patient with a peculiar periodicity, being to all intents and purposes insane one day and sane the next. This condition was kept up for a long period—the patient finally left the asylum. She came back at a later date, but on this occasion had lost the periodical character of her insanity.

The question of rationing in the asylums, and the present difficulties in the way of obtaining satisfactory food supplies was then generally discussed and considered. A good many different experiences were given both as to the results of using a

diminished allowance of bread and as to the difficulty of obtaining and using satisfactory substitutes.

A very interesting meeting was terminated by a hearty vote of thanks to Dr. Jeffrey for so kindly welcoming and entertaining the members.

SOUTH-EASTERN DIVISION.

THE AUTUMN MEETING of the South Eastern Division of the Medico-Psychological Association was held at the Springfield War Hospital, Beechcroft Road, Upper Tooting, S.W. 17, at 2.30 p.m. on Thursday, October 4th, 1917.

The following members were present : Drs. D. Bower, J. Chambers, M. D. Eder, J. H. Earls, C. F. Fothergill, E. G. Fearnside, A. H. Griffith, S. J. Gilfillan, H. E. Haynes, H. J. Norman, N. Oliver, G. E. Shuttleworth, R. H. Steen, R. Worth, and J. Noel Sergeant (Hon. Div. Sec.).

Major Worth took the Chair.

The minutes of the last meeting were read and confirmed.

Dr. Fearnside was unanimously elected an ordinary member.

The date and place of the Spring Meeting were left to the discretion of the Secretary.

Major Worth was elected a member of the Divisional Committee of Management in place of Dr. R. P. Smith, who had intimated his inability to act.

Major Worth called upon Dr. Fearnside to read his paper on "Neurasthenia and Shell Shock," and then read his own paper on "The After-care of Shell Shock Cases."

A short discussion followed, in which Drs. Eder, Fearnside, Sergeant, Steen, and Worth took part.

At this stage the members availed themselves of the tea which had been hospitably provided, and carried on the discussion in a more informal manner, after which a brief clinical exhibition of some interesting cases terminated a most enjoyable and instructive meeting, for which the gratitude and thanks of the members are due to Major Worth.

SOUTH-WESTERN DIVISION.

THE AUTUMN MEETING of the above Division was held, by the kind permission of Dr. MacBryan, at 17, Belmont, Bath, on Friday, October 26th, 1917, at 2.30 p.m.

The following members were present : Dr. Aveline, Lt.-Col. J. R. Benson, Drs. Lavers, MacBryan, MacDonald, Nelis, and the Hon. Div. Secretary, Dr. Bartlett.

Dr. MacDonald was voted to the chair.

Letters of regret for non-attendance from Drs. Devine and Soutar were read.

The minutes of the last meeting were read and confirmed.

Dr. Bartlett was nominated as Hon. Divisional Secretary, Dr. Aveline kindly expressing his willingness to undertake the duties should Dr. Bartlett be called for military service.

Drs. Aveline and MacBryan were nominated representative members of Council.

The place of the Spring Meeting (April 26th, 1918) was left in the hands of the Secretary for arrangement.

The decease of the Treasurer, Dr. Hayes Newington, was recorded with regret, and comment made on the great loss thereby sustained by the Association. The Hon. Secretary was requested to convey the deep sympathies of the members present to his sorrowing relatives.

Dr. Bartlett reported and made comments on the case and *post-mortem* examination of a microcephalic idiot, the chief point of interest being the absence of the corpus callosum.

The institution in asylums of Lord Devonport's scale for flour, meat, and sugar provided an interesting discussion, in which all the members present participated. The following points were discussed : (1) the exceeding of this scale in the case of flour only as regards the patients' dietary ; (2) the best methods to prevent waste in institution catering ; (3) the value of the saving effected by the substitution of the flour used over and above the allowance by other cereal foods ; (4) the difficulties arising in catering for the staff ; (5) the staff diet scale published in asylum reports, and how far this is binding on asylum authorities ; (6) the right of

the staff to claim the full pre-war issue on this scale; (7) the comparison of the cost of the reduced rations with the full pre-war issue on which the value of emoluments for superannuation purposes was fixed; (8) the right of the staff to claim a diet, equivalent in value to the amount fixed as board emolument; (9) the grounds on which permanent increases in salary and war bonuses had been generally given, and to what extent the reduction in food was thereby compensated; (10) the payment of a weekly sum of money in lieu of the rations deducted, as at present conceded in some asylums, and the basis on which this sum is computed; (11) the making up of the deducted diet with available substitutes, and so forming an acceptable and variable diet, as already favoured by some asylums. It was generally agreed that if all waste could be stopped there would be little, if any, need for rationing. The principle of fixed allowances was not considered as conducive to economy. There was a consensus of opinion that the fresh difficulties created through forced changes in the administration of institutions have produced troubles of an unexpected character, and considerably added to the cares and anxieties in the successful administration of asylums. Further, the different methods of dealing with the difficulties associated with the introduction of rationing the staff have not tended towards a general or ready acceptance of the many earnest and well-intentioned endeavours to meet and cope with unforeseen troubles. Apart from any question of right (which could only be determined by a test case) it was thought that the all round increase of wages fairly met any reduction in the dietary, and, further, it had to be remembered that the question of rationing applied to everyone.

SCOTTISH DIVISION.

A MEETING of the Scottish Division of the Medico-Psychological Association was held at the Edinburgh War Hospital, Bangour, on Friday, November 16th, 1917.

Present: Lieut.-Col. Keay, Major Hotchkis, Capt. Laurie, R.A.M.C.; Drs. Dods Brown, Crichtlow, Carlyle Johnstone, Kerr, Mackenzie, G. M. Robertson, Ferguson Watson, and Dr. R. B. Campbell, Divisional Secretary.

Lieut.-Col. Keay occupied the chair.

Before taking up the ordinary business of the meeting the CHAIRMAN referred in appropriate terms to the loss which the Association and the Scottish Division had sustained since last meeting through the death of Dr. A. R. Urquhart, formerly Medical Superintendent of Murray's Royal Asylum, Perth. He stated that Dr. Urquhart had taken a very active part in the affairs of the Association, having been President in 1898, co-editor of the *Journal of Mental Science*, and Divisional Secretary for Scotland for several years.

It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Medico-Psychological Association desire to express their deep sense of the loss sustained by the death of Dr. A. R. Urquhart, and their sympathy with his relatives in their bereavement, and the Secretary was instructed to transmit an excerpt of the minutes to the relatives.

The CHAIRMAN also suitably referred to the great loss which the Association had sustained through the death of Dr. H. Hayes Newington, a former President, and Treasurer of the Association since 1894.

It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Medico-Psychological Association desire to express their deep sense of the loss the Association has sustained by the death of Dr. H. Hayes Newington, and their sympathy with his relatives in their bereavement. The Secretary was instructed to transmit an excerpt of the Minute to his relatives.

The minutes of last Divisional meeting were read and approved, and the Chairman was authorised to sign them.

Apologies for absence were intimated from Lieut.-Col. Thomson, President of the Association; Majors Eager and Stansfield; Capts. Stewart Campbell and Steele; and Drs. Yellowlees, Fraser, Easterbrook, Alexander, Tuach Mackenzie, and Shaw.

The SECRETARY submitted a letter of acknowledgment received from the

relatives of the late Dr. Turnbull, thanking the members of the Division for their kind letter of sympathy.

A letter was also submitted from Dr. Carlyle Johnstone thanking the members of the Association for their kind expressions towards him on his retirement from the Medical Superintendentship of Roxburgh District Asylum.

The business Committee was appointed, consisting of the nominated member and the two representative members of the Council, along with Drs. Carlyle Johnstone, Maxwell Ross, and the Divisional Secretary.

Drs. L. R. Oswald and J. H. Skeen were nominated by the Division for the position of Representative Members of Council, and Dr. R. B. Campbell was nominated for the position of Divisional Secretary.

The members were then conducted over part of the hospital by Lieut.-Col. Keay. The orthopædic workshops were first visited, when an opportunity was given to see the various ways in which incapacitated soldiers were being trained in useful forms of employment. The electrical department was next visited, when Major Rankine, Officer in Charge, explained the various forms of treatment, etc. Lieut.-Col. Stiles then gave a most instructive and interesting demonstration of various nerve injuries caused by wounds, explaining the surgical methods which had been successfully adopted to overcome many nerve lesions.

A vote of thanks to Lieut.-Col. Keay, Lieut.-Col. Stiles, and Major Rankine for the great trouble which they had taken to make such an interesting and successful meeting, concluded the business of the meeting.

After the meeting the members were kindly entertained to tea by Lieut.-Col. and Mrs. Keay.

IRISH DIVISION.

THE AUTUMN MEETING of the Irish Division was held on Thursday, November 1st, 1917, at the Royal College of Physicians.

Members present: Dr. J. O'C. Donelan, Dr. Drapes, Dr. Gavan, Dr. T. A. Greene, Dr. Mills, Dr. Rainsford, Dr. Redington, Dr. Rutherford, and Dr. Leeper (Hon. Sec).

Dr. Drapes having been moved to the chair, the minutes of the previous meeting were read and signed.

Letters of apology for unavoidable absence were received from Dr. Hetherington, Londonderry, and Dr. Greene apologised to the meeting for the unavoidable absence of Dr. Nolan of Downpatrick.

A ballot for the election of two new members was next proceeded with, and Dr. Redington was appointed scrutineer.

The CHAIRMAN declared that Dr. Christopher Costello and Dr. Vincent C. Ellis, Assistant Medical Officers of Portrane Asylum, Donabate, were elected unanimously.

It was proposed and seconded that in future elections of members, the word "unanimous" should be omitted in declaring the result of the ballot.

The Secretary was directed to forward a resolution of condolence to Dr. Oakshott, of Waterford upon the death of his only son, who fell gallantly leading his men in action at the Front.

Dr. MILLS next read his paper on "Homicidal Impulse," which produced a most interesting discussion.

Dr. MILLS said: I have chosen to speak on a subject on which there are wide diversities of opinion, and the views I intend to express are based on accumulated experience in the treatment of various insanities, and I will welcome criticism of my views, and hope to receive help and enlightenment therefrom. I regret that pressure of other duties and pre-occupation of my time with the details of administrative work incumbent on my office have prevented me from presenting a scholarly exposition of authorities, as is usually done when papers are read at meetings of the Medico-Psychological Association, but I offer for criticism my views as regards the alienation of patients suffering from what I call the homicidal impulse. The class of cases I propose to speak of from personal experience are those outlined in the following words of Bianchi, translated by MacDonald, quoted from the chapter on "Fixed Ideas and Obsessions":

"We now come to describe another group of obsessions—the obsessive

impulses. These are ideas which have a motor content, which present themselves before the consciousness, and, either directly or through the law of contrast, exert irresistible power of translating themselves into action. These are the so-called impulsive ideas; they are the reflex of identical precepts, or they arise through contrast. Once they have reached the field of consciousness these precepts fix themselves there, in open contrast with the sentiments and tendencies of the subject."

The foregoing quotation seems to me to provide an admirable synopsis of the type of cases I am dealing with, but a very insufficient and unsatisfactory elucidation of the underlying motives. I have in mind some cases in which the dominant obsession was towards sudden, impulsive, reckless, brutal, unprovoked violence against others. The first was that of L. M—, who is generally pleasant, suave, agreeable, good-tempered, and well-mannered, fairly well educated and intelligent, and answering questions with a ready treacherous smile. He has lived for years the institutional life of fellowship, if not comradeship, with others, and has suddenly made attacks on them with a furious malevolence that the Anthropoid might envy but could not excel. If it were not that help was forthcoming, one at least of the protagonists would be in very much the condition in which Kipling tells us that Bertrand and Bimi were found, and yet a few minutes afterwards he is quiet and composed, wears the same treacherous smile, assumes the air of an injured person, plausibly justifies himself by a series of explanations, and when controverted on one point with great readiness adopts another, and maintains it without regard to his previous explanation, and without any hesitation about lying freely. The explanations generally take the form of an implied necessity for self-defence, but when it is pointed out to him that he has never previously complained of the individual whom he attacked, he laughs it off without remark. He has killed a man, and shows as little remorse, grief, contrition, or regret at the act as a spider would at the death of a fly. There is a certain periodicity about the attacks which cannot be measured by time sequence, but their imminence is recognisable by the attendants, who know by his increased restlessness, irritability, and impatience that he is approaching the explosive period. His personal or family history gives no clue to his obsession. There is an indefinite history of sunstroke in England, admission to Lincoln Asylum, and discharge in three weeks. I am unable to offer any explanation of his motives, but suggest it may be an atavistic tendency to eliminate rivals. He has had at times persecutory delusions and hallucinations of a transitory nature.

I recall another case, that of P. McG—, who was dull, depressed, and melancholy for some time, but, after what may be euphemistically called partial recovery, discovered that his mission in life was to kill a man. He exercised a rare and refreshing judgment in the matter, and, though he said it did not matter whom he killed, he invariably selected for attack a senile dement or imbecile. One day he chose for his victim an imbecile friend of a very powerful patient, who intervened vigorously and with marked effect. The extraordinary and unexplainable result is that the impulse has disappeared, and he is now a useful worker, but talks a jargon which requires skilled interpretation. I have no explanation to offer of this case.

I quote another case, that of M. Q—. She belongs to the tramp class, is without education, and of low intelligence. Her husband deserted her for other women, which seems to have embittered her. She has many hallucinations of sight, smell, hearing, and taste, and persecutory delusions. There is no evidence of phthisis or syphilis, except the suggestive fact that of thirteen children eight were stillborn or died of convulsions in infancy, and only two now survive. She makes treacherous premeditated attacks, always with a certain amount of previous planning, on other patients and attendants, and when questioned is always unctuous and self-satisfied, and explains that she only acted in self-defence. She is utterly devoid of any moral recognition of her position, and her only point of view, which seems to determine her acts, is that of self-defence. When she begins she goes out to kill heedless of the consequences.

Dr. RAINSFORD remarked that in private asylum practice, cases suffering from homicidal impulse were rare. Formerly, in Bristol Asylum, he had seen a patient who had made a murderous assault on himself. This was a case in which no marked delusions seemed to have preceded the homicidal effort. He was much

struck by the remarks of Dr. Mills, assigning as a possible cause of homicidal impulse an atavistic tendency to a primitive state, and that the act was one of involuntary self-defence.

Dr. GAVAN drew attention to the fact that in many cases the patient's homicidal act was not caused by delusions and hallucinations. It seemed to be due to an uncontrollable impulse. He had an experience of such a case in Mullingar Asylum. The patient seemed to have no moral sense: he had burnt hay, apparently in pure wanton mischief, and had suddenly made serious attacks upon people.

Dr. REDINGTON also spoke of cases of homicidal impulse. He stated that observers had recorded cases in which an aura was present with a sensation of thirst and burning at the pit of the stomach. These sensations in the patient preceded the attack of homicidal impulse, and sometimes a patient himself gave notice of the attack to the attendants, and begged to be specially looked after.

Dr. J. O'C. DONELAN gave an interesting account of a case under his care, where a soldier had suddenly seized a rifle and bayonet in barracks and run it through a fellow comrade who was sitting at the fire. This man stated that he had no clear knowledge of murdering his comrade, but he believed that such was a fact, and he believed he saw somebody perpetrating the murder; he did not realise that he himself was the murderer, but accepted the fact that he had killed his comrade, because he was told he did it. This man had an epileptic sister.

Dr. LEEPER stated that, in his opinion, genuine cases of homicidal impulse were nearly always associated with masked epilepsy—*épilepsie larvée*. From the wide experiences of those present of homicidal impulse, arising apparently causelessly, and which no foresight nor knowledge that we possess would enable one to foresee, it was impressed upon us of the constant dangers attending the lives of those who dwelt amongst the insane.

Dr. DRAPES stated that homicidal impulses, they all knew, were likely to arise in epileptic, paranoid, stuporose, and maniacal patients. Stuporose patients were particularly anxious ones, as from an apparently lethargic condition, the patient suddenly became actively homicidal.

Other members having joined in the discussion, Dr. MILLS thanked the meeting for the very kind way in which his paper had been received, and for the discussion which it had produced. He had in Ballinasloe Asylum, a remarkable case where an old dement, for many years trusted as a harmless patient, had suddenly made a most determined homicidal attack upon an inmate. In many cases no apparent motive for this attack could be found to exist. This case seemed to be due to the survival of some atavistic tendency which might have been common enough in the Stone Age of humanity. It was not always possible to get any corroborative history of epilepsy or insanity occurring in the patient's person or family.

A most interesting discussion on "The Alimentary System in reference to Mental Affections" was opened by Dr. RAINSFORD, who expressed his surprise at finding that there was not much helpful literature on the subject available; and that the most interesting paper bearing on the subject was a paper by Dr. Wm. Eustace, read at the Irish Division.

He said that Punch's celebrated advice to the harassed wife inquiring how best to manage an irritable husband—"Feed the brute"—probably embodied more psychological truth than was generally understood. We are all conscious of the sense of *bien être* which follows on a good dinner, well digested, and of the opposite feelings when faulty digestion interferes with the happiness which would otherwise result. He had been much interested in a recent communication to the Journal from Dr. Mercier on the "Influence of dietary on various mental states." Dr. Mercier found that from a review of a number of cases of mental disorders due to errors of diet, that—

- (1) Deficiency of meat was a potent cause of confusion of mind.
- (2) Excess of fat in diet caused severe headache, migraine, and general mental confusion.
- (3) Frequently excess of starch and sugar caused mental depression.

Dr. Rainsford was of opinion that toxæmic conditions had their origin in the large intestine, and that the toxins there generated were carried into the blood, and thereby affected the higher nerve centres and so gave rise to various states of mental disorder. He put forward as supporting this view, the beneficial effect

he had observed from the administration of intestinal antiseptics, notably the liq. hydrarg. perchlorid. (B.P.), and quoted various cases illustrative of this. He also suggested that in many cases various delusions and hallucinations met with in mental cases would be found on close examination to have a physical basis instancing the delusion of having gone long walks in cases of peripheral neuritis, and of rats in the stomach in cases of chronic irritative dyspepsia.

In epilepsy, Dr. Hughlings Jackson long since pointed out the benefit that resulted from a salt-free diet. In a few cases it was found that a daily dose of 3ii of salt notably increased the number of fits, and in some cases marked diuresis supervened, up to 130 oz. of urine being passed in twenty-four hours. It had been stated that where ingestion of salt was accompanied by marked diuresis which was not compensated by drinking water a rise in protein metabolism occurred.

In Dr. Eustace's paper, read at the Summer Meeting of the Irish Division, 1914, it was pointed out that auto-intoxication might occur in various ways: (a) histogenic, (b) organopathic, (c) gastro-intestinal; and that under certain circumstances toxins developed by microbes become excessive and get into the blood-tract. Putrefaction of proteid gives rise to various organic poisons—indol, phenol, and skatol—that the liver has a great destroying power, using up ammonia and amino-acids forming urea, and transforms offensive aromatic products into less offensive material.

The influence of various physical disorders on the course of a mental attack was also dealt with, and cases were quoted showing the effect of the incidence of tubercle, pneumonia, and sharp febrile attacks generally.

Attention was drawn to a recent paper by Drs. Orr, Rows, and Stephenson, on "The Spread of Infection by ascending Lymph Stream of Nerves from the Peripheral Inflammatory Foci to the Central Nervous System," in which it was stated that experiments had shown that the infection of the lymph system of the peripheral nerves caused an ascending neuritis which spread upwards to pass over the posterior root ganglia and along the spinal roots to the cord.

In conclusion, Dr. Rainsford apologised for the very scrappy nature of his remarks, but expressed a hope that succeeding speakers would find in them something which, from their wide experience and knowledge, would suggest to them thoughts which would illumine the discussion, and diffuse more information on the subject.

The CHAIRMAN said they all owed a great debt of gratitude to Dr. Rainsford for the able way in which he had introduced the subject under discussion, which had elicited some valuable comments from the members.

Dr. J. O'C. DONELAN mentioned the marked beneficial results to patients by treatment with naphthaline. This substance acted as a powerful intestinal antiseptic, and he had found it very useful in cases where there was intestinal stasis and evidence of toxæmia in mental states.

Other members spoke in similar terms of the value of purgation and a course of intestinal and antiseptic treatment, saline injections, and other means of dealing with cases of insanity whose condition depended upon morbid states of their alimentary system.

It was proposed by Dr. RAINSFORD, and seconded by Dr. DONELAN, that the best thanks of the Irish Division be tendered to the President and Fellows of the Royal College of Physicians for their kindness in allowing the Division to meet in the College, which was passed unanimously.

CORRESPONDENCE.

ROYAL COLLEGE OF PHYSICIANS,
EDINBURGH;

December 17th, 1917.

SIR,—We have the honour to transmit to you a Statement adopted by the Royal College of Physicians of Edinburgh dealing with the question of the establishment of a Ministry of Health.

The College was led to take up the consideration of this matter by the attention

which has been recently given to it, and by the general interest aroused by its discussion in the public press.

The opening paragraphs of the Statement explain the position the College occupies under Royal Charter, and we would emphasise the fact that under the privileges conferred by the Charter it is the duty of the College to consider "any matters affecting the general interests of the medical profession and the public."

Acting on this privilege the College has considered the question of the establishment of a Ministry of Health, and has accepted the general proposition that it would be to the advantage of the public health were the various existing health agencies co-ordinated and brought under the supervision, control, and initiative of a Board of Health, constituted on the lines suggested in the Statement, and presided over by a Minister of State.

The only aspect of the question which leads to a divergence of view is as to the desirability of proceeding with a scheme of such magnitude at this strenuous and anxious time in the nation's history, when the medical forces of the country are largely disorganised. In the circumstances the prevailing opinion of the College is that the establishment of a Ministry of Health ought to be postponed until after the war.

We have the honour to be

Your most obedient Servants,

WILLIAM RUSSELL, M.D.,

President.

A. DINGWALL-FORDYCE, M.D.,

Secretary.

STATEMENT by the Royal College of Physicians of Edinburgh regarding the Proposal to Institute a Ministry of Health.

The Royal College of Physicians of Edinburgh was erected by Royal Charter granted by His Majesty King Charles the Second, 29th November, 1681, and incorporated anew by Royal Charter granted by Her Majesty Queen Victoria, 16th August, 1861.

The Royal College has been, and continues to be largely concerned with matters affecting the Health of the nation. It has taken considerable part in developing medical science and practice. It is therefore particularly interested in all proposals which have for their aim the erection of a State Department of Health.

The Fellows of the College have given careful consideration to the subject. The statement which follows is the outcome of deliberations, which had regard to the great questions of Health and the urgent need of their recognition and effective handling by the State. The standpoint of the College is frankly medical, not political or departmental.

The administration of Health measures has in the past been developed in connection with a number of Government Departments, such as the Local Government Board, Home Office, Board of Education, Insurance Commission.

Each of the several Departments has worked within the limits of certain Acts of the Legislature dealing with definite subjects and conferring definite powers.

The Health of the Community has received benefit from the work of the Departments; but the operations of the Departments have not attained that comprehensive measure of success which the extent and gravity of the Health problem demand.

As regards Health questions, the sphere of the several Departments is limited, and, with increasing legislation, the overlapping which inevitably follows from their separation becomes steadily aggravated.

A fundamental weakness lies in the fact that in none of the Departments concerned is the control vested in a Minister appointed primarily to deal with Health problems.

From this division of interest and responsibility departmental difficulties are apt to arise: policy in regard to matters pertaining to Health tends to become subject to considerations of departmental jurisdiction: and the essential interest of Health questions is liable to be obscured.

Under the restrictions of the present system it has been impossible to evolve concerted means for dealing with the complex and ever-widening problems of National Health. Not until these restrictions are removed will it be possible to attain effective and adequate machinery.

What is required is the creation of a Ministry which shall concern itself with Health matters pure and simple, and to whose jurisdiction shall be transferred from other Departments the operations of all existing enactments in so far as they deal with Health.

This opens up another aspect of the question, namely, the immense extent of the issues involved.

Existing Acts deal only with sections and fragments of the subject. A multitude of conditions affecting Health are not included in the purview of the Acts, and have hitherto been left untouched.

The Minister of Health must handle the whole problem. He must be concerned not only with questions already dealt with by the Legislature, such as infectious Diseases, Infant Welfare, etc., but also with fresh questions arising from time to time, e.g., conditions causing or affecting forms of sickness and disease not yet included within the operation of Health Acts.

Such matters are frequently brought to light in the work of the medical profession. Beyond the treatment of individual cases by medical practitioners there are large questions concerning conditions to which sickness is due. These are certainly matters for a Ministry of Health.

To enable the Ministry to carry out its wide and highly complex functions, a Board of Health should be constituted, and its members selected in such a way as to ensure that the attention of the Ministry of Health would be directed to all matters affecting Health.

The Royal College of Physicians of Edinburgh is, therefore, of opinion that it is essential, in the public interest, that a Government Department should be erected to deal exclusively with Health.

The Royal College suggests:

- I. That the Department should consist of the Minister and a Board of Health, of which the Minister should be Chairman and whose Members should be elected on the ground of experience and interest in matters pertaining to Health.
- II. That the Purposes of the Department should be:
 1. To administer the Health Acts.
 2. To devise executive measures for dealing with Health problems not hitherto defined by legislative measures.
 3. To institute inquiries with a view to introduce measures for improving conditions affecting Health.
 4. To develop facilities for investigation of problems in Health and Disease as they may arise.
- III. That the Board should include three Groups of Members:
 1. Administrative officials.
 2. Laymen with wide experience of Health problems, or in the administration of hospitals and other health agencies, official or voluntary.
 3. Medical members who have had experience in:
 - (a) Public Health Service.
 - (b) General Practice.
 - (c) Special Clinical Departments, including Industrial Medicine.
 - (d) Medical Research.
 - (e) Medical Statistics.

In name and by Authority of the College,

WILLIAM RUSSELL, M.D.,
President.

A. DINGWALL-FORDYCE, M.D.,
Secretary.

EDINBURGH:

6th December, 1917.

ERRATUM.

To the Editor of the JOURNAL OF MENTAL SCIENCE.

DEAR SIR,—In the obituary notice of the late Dr. Urquhart it should have been stated that he succeeded Dr. William Lauder Lindsay in 1879 instead of, as recorded, Dr. Murray Lindsay (a brother who was Superintendent of the Derby Asylum) in 1880.

I am,

Yours truly,

TIPPERLINN HOUSE,
MORNINGSIDE PLACE, EDINBURGH;
January 12th, 1918.

GEORGE M. ROBERTSON.

OBITUARY.

JULIUS MICKLE, M.D.(Toronto), F.R.C.P.(Lond.)

To most of the present members of the Association it is only his name and his connection with a standard book on *General Paralysis of the Insane* that remains; but with him has passed away one of the senior members of the Medico-Psychological Association. He was elected in 1871, and thus for forty-seven years has been a member. He was Assistant-Physician, for short periods, to the Derby and County Asylums, but his life's work was done at Grove Hall, Bow. This was really a private asylum, belonging to Mr. Byas, that was taken over by the East India Company for the soldiers and other employees of the Company, and the experience of Dr. Mickle, therefore, was chiefly with old soldiers who had served abroad. As a result of this experience he was specially interested in brain disease due to syphilis, and to tropical conditions such as sunstroke and arterial degeneration.

But before entering on a discussion of his work and his professional position, one must look at him as a man. He was tall, soldierly in aspect, with a long black beard. He was very formally courteous in manner, but distant, and not given to any wide social life. His surroundings at Bow, in the East End of London, to a great extent cut him off from general society, and he was a self-contained man. His work and his duty tied him to the East End. He, however, when called upon to preside at meetings, or even at public dinners, proved a capable and genial host.

A most painstaking observer and recorder, one might say that he was rather a fact-heaper than a philosopher. His power of extracting the observations and records of work of others was most praiseworthy. His published works were encyclopædic; anything that anyone had ever recorded on the subject he was interested in was plainly set out by him. One result of this was that we had all the facts, but one was left in doubt as to their bearings and as to the recorder's own opinion as to their relative values. This voluminous collecting of facts and recording is well referred to by the late Sir John Bucknill in *Brain*. As I have said, dignified and reserved, but with good power of control, he managed a rather difficult body of old soldiers with ability and success. Yet he passed what one would have thought was a rather unsatisfied life. He was unmarried, and, as far as I know, had no special hobbies, and was not given to sport of any kind. He was a general reader. He continued at Bow until the institution was closed ten years ago, and then, for some years, he lived at Bayswater. But later his general health failed and he returned to Canada.

Next as to his professional position. He was an M.D. of Toronto, and after being a student at St. Thomas's Hospital, London, he took the M.R.C.S. and L.S.A., and in 1879 he became M.R.C.P. London, and in 1887 was elected as a Fellow of the College. He was an active member of the British Medical Association; he was Secretary to the Section of Psychology at the meeting in Liverpool in 1883, Vice-President at Glasgow in 1888, and President at the annual meeting in London in 1895, and again in Toronto in 1906, when he received the honorary degree of LL.D. He was President of the Medico-Psychological Association in 1896, and was also President, later, of the Neurological Society. At each of these he gave an important introductory address. He delivered the Gulstonian Lectures

at the Royal College of Physicians in 1888. From these facts it will be seen that his work and position were well recognised by the profession.

And now to proceed to speak more in detail as to his life's work. His name will always be associated with his book on *General Paralysis*, which passed through two editions, the second being a much larger and more complete study of the subject than the first. It certainly was the most complete collection of all facts recorded by English and foreign observers up to 1886. In a way, it is bewildering from its completeness as to the opinions and observations of others. His own observations and methods of study are fully given, and are invaluable as a kind of dictionary of general paralysis of the insane. But one is left in doubt, on many points, as to the conclusions which he himself had arrived at. In this book he nowhere states that he has made up his mind as to the relationship existing between syphilis and general paralysis, although, as I shall point out later, he recognised that there was very strong evidence that it was chiefly associated with a history of earlier syphilis in the patient. He gave, among the causes of general paralysis, various pathological changes which he had met with *post-mortem*. Thus, the presence of gummata and gummatous changes in the membranes of the brain, the arterial degeneration also met with in these cases. But the discovery of the spirochæte had not been made, and so the real pathology of the disease was still not understood by him. The description of the various symptoms is excellent, and one recognises them as the work of a careful and accurate observer. He was always proud of being the first physician to associate the cortical changes in the brain met with in general paralysis as evidences of localisation of function. He very carefully recorded the localities of the cortex of the brain to which there were adhesions of the membranes, and associated them with the clinical symptoms observed. Later, I shall refer to the use he made of these observations in a classification. He differs from most recent writers, however, in his classifications, and I fear that at present we are not in a position to make a natural system or order of classification of general paralysis. I may take one or two individual instances of what I may call his meticulous care in reporting the opinions of others while leaving one in doubt as to his judgment and his experience. Under the head of the ophthalmoscope, he accepts the fact that with ataxic symptoms there may be atrophy of the disc. He says that the reports of the ophthalmoscopic observances in general paralysis seem to have been extremely confusing, and he gives several pages bearing out these opinions. He even quotes fully the observations of Sir Clifford Allbutt that have since been hardly confirmed, as to the relationship between general paralysis and changes in the optic discs. This one section in reference to the eye conditions met with in general paralysis is a very good example of the infinite care which he took in recording symptoms.

A very interesting chapter is on the pathology of the varieties which he noticed, and he is particularly careful in guarding against the consideration of the classification as being anything more than a classification of varieties. He gives five different groups, and, briefly, one may refer to these from the pathological side. I may say that with each group, besides the pathological findings, he gives also the associated clinical symptoms.

The first group shows cerebral hyperæmia and softening, usually generalised, but particularly affecting the cortical substance of the superior external, and, to a less extent, the internal, fronto-parietal regions. The second group, atrophy of the brain, much intracranial serum, ventricles dilated and much granulated, gyri of the brain wasted, especially on the upper surface and at the frontal region, the corresponding grey cortex being either softened or, occasionally, of about normal consistence; watery and sodden, and at times a fair colour, even mottled. Third group: The left cerebral hemisphere is much more diseased than the right, and is atrophied, usually atrophy of the grey cortex. Fourth group: Lesions which are more marked on the right side than on the left cerebral hemisphere. The general description of the changes in the left hemisphere in the last group is transferred to the right. Fifth group: There is local, reddish, occasionally pale, induration of the cerebral cortex, sometimes of wide distribution in its lesser degrees, more marked in the frontal lobes or their anterior portions, and affecting either one hemisphere or both. The indurated part is usually atrophied: the non-indurated is of ordinary colour, or pale.

Each symptom of each variety of general paralysis is given in careful detail.

As to the causation, I have already referred to the fact that he looked upon syphilis as a chief cause, not as the only one, and he gives dozens of contributing causes, and he seems to consider alcohol as almost as important a cause as syphilis. He was also in advance of his time in recognising that the early symptoms of general paralysis may be functional, purely functional—that, in fact, they may be hysterical or neurasthenic. And he gives good examples of how easily one may be mistaken in relationship as to whether symptoms are due to functional or to organic disorder. His contributions on brain syphilis, apart from general paralysis, are very numerous, most of them appearing in *Brain*. In these he recognises the mental symptoms associated with the various diseases of the different parts of the brain, recognising the arterial degeneration, the thickening and inflammation of the membranes, and the special inflammatory changes taking place in the cortex. He gives many examples of the coarse gummatous changes which may be met with in association with mental disorder and syphilis.

Besides his work in relationship with syphilis and general paralysis, he paid a very great deal of attention to heart affections, or, perhaps one had better say, the relationship of mental disorder to disorders of circulation. Under this head one might place his Gulstonian Lectures, and one would refer to the synopsis of these lectures and the opinions which he formed that are given in Tuke's *Dictionary of Psychological Medicine* under "Mental Symptoms with various forms of Heart Disease," vol. i, p. 178. I must say that here again we have a most painstaking collection of mental symptoms associated also with certain pathological changes, but they are not by any means convincing as to the relationship between the two. Besides the Gulstonian Lectures, he wrote on a possible relationship between aneurysm and mental disorder, his experience of aneurysms being, as might have been expected, rather common in the case of the soldiers from the Tropics. He points out that in association with aortic aneurysm you might have insanity, or mental disorder of one kind or another, which may depend upon morbid impressions from the mere size of the tumour; secondly, from alterations produced by the tumour on the circulation; third, the effect of the compression of this tumour on other organs. He found general hallucinations were common, also delusions of annoyance and ideas of persecution, and it is not surprising that there was a good deal of emotional disorder with hypochondriacal and melancholic symptoms.

Besides these subjects, he wrote also on katatonia, and he fully recognised the relationships of katatonia to mental stupor, and his description is quite up to our present knowledge.

Next I would refer to one of his largest contributions, and that was "Atypical Brains and their Relationship to Mental Disorders." Here again, I think, one sees one of the marked weaknesses of Mickle. He observed and recorded in the most elaborate way variations in the convolutions which he met with *post-mortem*, and he seems to associate them, very distinctly, with a theory of evolution. For instance, one may put it in this way: that a slightly atypical brain might represent a more primitive state of mankind; that such a brain was typically primitive. Another group of atypical brains represents accidental but defective development—arrest, one may say, of development both physical and mental. Then he refers also to what might be called reversion, so that some atypical brains rather resemble the convolutional arrangement met with in lower animals. This latter classification or idea is so like the one which was propounded by Prof. Benedikt, of Vienna, when he exhibited the brains of murderers from Austria, and pointed out how certain convolutions resembled those that were to be met with in carnivora, that one looks upon both his theory and that of Dr. Mickle with some surprise and amusement.

Dr. Mickle not only was a careful observer of pathological processes, he also was a careful student of treatments. He had very strong views that digitalis was about the best remedy that could be given in many cases of mania and mental excitement. He wrote upon this subject, and he also wrote upon antifebrin in cases of pyrexia.

In dealing with Dr. Mickle, one finds it absolutely impossible to cover all the ground concerning the work which he did. But, to sum up. For progress in science it is necessary to have, first, careful observation of facts; next, to have a complete and accurate record of such facts and their truth established; last, and highest, an arranging and philosophising on these facts, passing thus from positive

knowledge into the possible, from the definite to the indefinite, which, later, is to become more definite and a stage for further advance. Mickle was a careful observer and a most indefatigable collector and recorder, but his collection of facts was so general as to be rather a heap than an arranged group. He toiled, but he hardly constructed. And now he has left very many valuable collections, from which others may select. Born in a colony, living his life in the Mother-country, when failing in general and mental health he returned to die in his home colony.

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G. H. S.

WILLIAM GRAHAM.

DEATH, in these latter days, brings few surprises. It is with numbed emotions that we accept the daily sacrifice of our best; yet, even thus environed, the swift passing of William Graham seemed unbelievable. No personality was less suggestive of mortality; no man went his way less conscious of the suspended sword. Independent, fearless, and untiring, he planned and worked without thought of untoward interruption; and as he lay on his death-bed he was meditating, and writing of, large schemes of travel and research, to be undertaken when his practical work for the insane should be ended.

William Graham was born at Dundrod, in the Co. Antrim, on November 25th, 1859. He was educated in the Queen's College, Belfast; obtained the M.D. degree of the old Royal University of Ireland in 1882, and became L.R.C.S. of Edinburgh in the following year. Specialised study in London and on the Continent resulted in his appointment in April, 1884, as Assistant Medical Officer at the Belfast District Asylum. In the December of 1886 he was appointed Resident Medical Superintendent of the Armagh District Asylum, being then probably the youngest superintendent in the United Kingdom. The latter appointment owed nothing to influence in high places. William Graham was selected on his observed merits to fill a troublesome post; a choice which he more than justified.

The Armagh Asylum, under Dr. Graham, inaugurated in Ireland a high standard of internal equipment, and when his ten years' service there ended the inspectors devoted more than two pages of their annual report to an enumeration of the substantial and permanent improvements effected under his rule—a tribute as well-deserved as it was exceptional.

In the autumn of 1897 he received further promotion, returning to the Belfast Asylum as Superintendent, and there found ample scope for his large activities. The Belfast Asylum was built in the year 1829 for 104 patients, and was subsequently

enlarged to 400 beds, while at this time the asylum population had risen to over 700. To meet this pressure the Governors had recently purchased, but had not begun to develop, an estate of 295 (now over 400) acres at Purdysburn, a few miles outside Belfast. The new Superintendent saw his opportunity, and followed it up with characteristic enthusiasm. His plans were accepted and liberally executed by a progressive asylum committee, and the product is the Purdysburn Villa Colony—nearly, but not quite, completed. For twenty strenuous years he combined the duties of superintendent with personal supervision of every detail in the construction of the new villa colony. This is not the place or moment for any description of his achievement. The colony has been visited by many members of the Association and is recognised as perhaps the best that has been done for the insane poor in the United Kingdom. In recreation the doctor was as energetic as in work. He took his rest on horseback, in the hunting-field, or on the polo-ground.

No fitter memorial can be raised to William Graham than the continuation of the colony as he designed it. Ireland, in these matters, has fallen somewhat back in the race; and one hopes that, for example and encouragement, the original design of the model villa colony will be worthily completed.

The successful superintendent, the creator of the model villa colony, was sufficiently well known, though he shunned publicity and made no bid for professional or popular fame. There was another William Graham whose acquaintance was made with difficulty; not so much from conscious reserve on his part, but because this other personality was accessible only in moments of comparative repose, and such moments were rare. In his speculative moods he was the best of companions and conversationalists; ready either to talk or to listen, and never dogmatising. He was profoundly interested in every branch of psychology; his study was of the mind in apparent health, as well as of the mind disordered. The particular mental twists which determine humanity to its divergent opinions and beliefs, aspirations and negations, were of unceasing interest. A man of few prejudices and no intolerances, he postulated no categories of the impossible or the incredible. His attitude was consistently that of student and observer. An evening of talk over the fire at Purdysburn House was a realisation of Stevenson's aphorism: "The tendency of all living talk draws it back and back into the common focus of humanity."

He was inevitably attracted by the theories of Freud, and put them on trial in asylum practice, but the analysis practised by Graham did not conspicuously recall the distinctive hypothesis of Freudism round which controversy has gathered. In the early summer of 1914 he started on an expedition to the South Sea Islands, "to see," as he put it, "mankind in the rough." The outbreak of war closed the route to the South Sea, but he was enabled to view humanity in various development over a great portion of the globe.

During the last few months of his life he undertook additional responsibilities as Lieutenant-Colonel in command of the new war hospital now occupying the buildings of the old Belfast Asylum. The inevitable routine and clerical duties were in many details uncongenial, but success, as usual, attended his true professional work, to the very great benefit of his soldier patients.

He died on November 5th, 1917. A slight accident had caused fracture of the femur, and the sudden and unexpected end resulted from an embolism occurring while he lay disabled. He was fortunate in his death. Pain he could have borne, but not easily the gradual failures of old age.

"To believe in immortality is one thing, but it is first needful to believe in life."

William Graham "believed in life."

DR. HENRY MAUDSLEY.

WE regret to have to record the recent death of Dr. Henry Maudsley. Owing to limitations of space an obituary notice of our late colleague must be deferred till the April number of the Journal.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN
AND IRELAND.

THE following resolution was passed at the meeting of Council held on November 27th, 1917:

"That in the case of a Member of the Medico-Psychological Association on Foreign Service who makes a request that his subscription should lapse during such service, the Treasurer should report the name of the Member to the Council, who should have the power to sanction this request."

NOTICE TO CONTRIBUTORS.

N.B.—The Editors will be glad to receive contributions of interest, clinical records, etc., from any members who can find time to write (whether these have been read at meetings or not) for publication in the Journal. They will also feel obliged if contributors will send in their papers at as early a date in each quarter as possible.

Writers are requested kindly to bear in mind that, according to LIX(a) of the Articles of Association, "all papers read at the Annual, General, or Divisional Meetings of the Association shall be the property of the Association, unless the author shall have previously obtained the written consent of the Editors to the contrary."

Papers read at Association Meetings should, therefore, not be published in other Journals without such sanction having been previously granted.

THE EDITORS regret that owing to the great shortage of paper the size of the Journal has to be reduced, the limit assigned being 96 pages, which, however, has been unavoidably exceeded. For the same reason the entire text has to be printed in small type.



HENRY MAUDSLEY, LL.D.Edin.(Hon.), M.D.Lond., F.R.C.P.Lond.

Obiit January 24th, 1918.

Editor of Journal 1862-1878.

President, 1871.

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HENRY MAUDSLEY, M.D., F.R.C.P.LOND.,
LL.D. EDIN. (HON.).

IN my endeavour to provide a suitable obituary notice of Dr. Henry Maudsley, I shall make frequent use of his own words. And thus I begin with an extract from his obituary of his father-in-law, Dr. Conolly : "The history of the man is his character. When a man dies who has occupied a conspicuous place in the world's eye, there is a great noise of lamentation heard. At the moment it seems as if nothing ever could compensate for the mighty bereavement. But Nature's serene features, fixed in their majestic and unchanging calm, reveal no sympathy with the sorrows of her children. The individual loss is her gain, death is the new condition of life, and the funeral dirge the song of joy for the new Conception."

As to the man Maudsley, as he said of himself, he was a man of two temperaments, two distinct and original differences. We always think of Wendell Holmes and his way of representing each person as he is, as he appears to others, and as he appears to himself. Maudsley, as he appeared to others, was cynical and rather unfriendly : a man who seemed to prefer solitude and contemplation to social life. He could, and did, enter into some social medical life, and belonged to at least one dining club. But there he showed his critical side, and was not personally popular. All recognised in him the critic, and in many cases did not show their best side to him. He was uncompromising, and perhaps hardly entered into the other man's mind and conduct. He had a very high standard not only of what was right, but of what was most seemly. Anything like professional self-assertion or advertisement he condemned. To the outside world he appeared to be a materialist and a pessimist, with no basis of any religious faith ; yet I have known him repudiate the accusation of being opposed or antagonistic to religion. Besides being a materialist and a careful seeker for truth gained by observation,

he accepted Agnosticism, but he felt that although he had little use for religion or faith himself, for others it might serve as a help. The Bible, he says, does not teach science : it speaks of important truths to man in a way he can best understand. It is the Infinite speaking to the finite and adapting Himself thereto.

Personally, he was a handsome man, and he had a healthy amount of conceit. In younger days he was carefully dressed, and scrupulously careful of his hands. As he grew older, he allowed his hair and beard to grow long, and he had rather the aspect of an aged prophet. To the end his senses were keen and his movements active. As I have said, he was critical, and he had a Gladstonian habit of using post-cards. I have a collection, which I have headed "Maudsley's Fire." I shall never forget some of these, in which he criticised either something I had written, or some opinion I had given. As will be seen, he led a life apart, though he belonged to the Reform Club, and, I think, to the Savile ; yet he was not a clubbable man. Though fond of Art, he had no special taste, and, I believe, avoided one of the vices of doctors with means—he was not a collector of anything. He had no knowledge of, or interest in, music. He was fond of bowls as a game, so I understand, but cricket was his great pleasure. I do not know that, even in youth or later, he played in any great match, but for some years, I think, he used to go up to Lord's, where he was bowled at by professionals. He went, when over seventy, to Australia, as he said, to see the best of cricket in its best home. Anyway he attended matches, and had a complete knowledge of players, both English and Colonial, and of their peculiarities. Later, when he went to live at Bushey, he used to drive a pair of horses. I believe that for some time he took quite a Yorkshireman's interest in horses.

He was a brilliant success as a student, but I remember his telling me that he felt rather ashamed of winning medals and prizes, as they did not represent real knowledge, but only accurate memory. He said he had an unusual visual memory, and that if asked a question he seemed to be able to copy the answer from the text-books. There is no doubt he had a wonderful memory, and he was always ready with quotations from Shakespeare, the Bible, and from certain poets. I do not think he professed to being a Shakespearean authority, but he was a great lover of his works. Early in the sixties he wrote a study of "Hamlet," maintaining that he was not insane ; and in 1908 he wrote about "Shakespeare in his own bringings-forth," gleaning the history of Shakespeare from his writings.

His literary style was very cultivated, and yet there was a fluidity which relieved its rather long and formal sentences. I have no knowledge as to his method of writing or correcting, but I should fancy he was very careful and very painstaking.

So much for what Maudsley appeared to the world. As to Maudsley himself, it would be rash to give at present an opinion. That he was a man of refined taste and critical habit there is no doubt. That he had a deep sense of tenderness, I think, is also true, but his political Radical principles seemed to mask this, and I once told him he seemed to be so absorbed in his love for humanity that he had no affection to spare for the individual man. As a result, he had very strong feelings in reference to the treatment of the insane, and was very jealous of any return to undue control being used over them. He was extreme in this in some ways, and I had some rather sarcastic communications from him in reference to forcible feeding. He maintained that it was hardly ever necessary, and that it was degrading to the doctor and to the patient. He fully recognised his independent opinion, and was not always tolerant of opposition.

Maudsley was a home-lover, and I feel, with others, that if he had had children he would have gained, and that his sympathies would have been wider. He was a close critic and careful student of current medical knowledge, but very independent in his ways of expressing his opinion.

Next, I purpose considering him as an author. His first essays, as far as I know, are to be found in the *Journal of Mental Science* in 1859, when Bucknill was editor. Bucknill called him then the young philosopher. He was only twenty-three. His first article was on "The Correlation of Physical Forces," being a review of Groves' epoch-making book, as well as a notice of some other books on similar subjects. The review was a good example of Maudsley's style and of his future lines of thought. He began with a general abuse of the accepted ideas of philosophy, pointing out the futility of wrangling about words instead of following observed facts. He says: "Wretched mistaken man that thou art! How long, how long wilt thou rest satisfied to concern thyself with the heresy of phenomena when there is in actual existence essences in the Universe? Science cannot be possibly rejected, and must be accepted. It must be regarded as affording data on which to found the investigation of the real and the spiritual, or by whatever other name it is called. The enlightened mind conquers Nature by obeying her. Conscious soul may forget; unconscious soul does not. Of all vanities metaphysics is the vanity of vanities, and the study thereof is vexation of spirit."

In Maudsley, however, there was a religious feeling, though, apparently, great contempt for formal religion. He accepts Sterling's statement that science is religion; all things are so. Nothing is irreligious but by error and by ignorance. For what is science but truth, and the knowledge we get thereby but a knowledge of the laws of Nature, which are the ways of Providence? A world of revelation, there can be no finality, as there is no finality in knowledge.

In a very long article on "The Genesis of Mind" he follows the line of evolution, and is against there being any proof of any other than simple natural processes to explain the development of consciousness, of mind, and of intellect generally. He traces, in the lower animals, the growth first of reflex nervous action, which passes gradually through sensational to the highest ideational relationships to the environment as seen in man. He is greatly influenced by Darwin, though, after his usual manner, he suggests that Darwinism may, after all, be but a passing phase of philosophy. Yet he fully recognises the gulf between mind and matter. He is in opposition to many recent observers in believing that acquired traits may be transmitted. The article is full of many animal tales, some of which would need a good deal of evidence to accept. Man is endowed with a noble birthright; he must labour hard to assert it, for it is by no means sufficient for him to open his eyes upon the world, but absolutely necessary that he should look into it. In 1864 he wrote a long article on "Considerations with Regard to Hereditary Influence." This is full of wise thought and epigrammatic teaching. In this we see still the influence of Groves' article on "Correlation and Conservation of Force," there being, as he says, no beginning and no end—all one continuity. Man has to learn that he is but a link, and not the last link, in the mighty chain of the Universe. He compares the union of the parents to a chemical, not to a mechanical union, the results differing from both elements. One can only give short extracts from, or references to, his article. He points out how twin monsters may have different temperaments, though, of course, precisely similar origin. It is a fact also, he says, that distinguished fathers often have weak sons, while parents "with restrained or contracted expressions may produce strong children." He thinks that by great men society may gain, but the family may suffer. No mortal can transcend his nature, and his present nature is by no means a present production; it has descended from the past through the regular laws of development. The destiny of man is innate in himself. He is strongly of opinion that men given to great sexual indulgence will fail in mental vigour, and that the intellectual man may very probably fail sexually; he is of opinion that emotional disturbance may affect the quality of the semen, or the nature even of the ovum, and hence affect the progeny. Temporary mental conditions of the parent may affect the offspring. Here, as elsewhere in Nature, we are taught the eternity of action of any kind—that nothing perishes absolutely in the Universe, not even a gust of passion. From normal heredity he considers morbid transmission.

In conclusion, then, it may be added that the supposition that definite laws of organic combination do exist and determine the nature of the individual as surely, though not yet as clearly, as the laws of chemical combination determine the nature of a chemical compound,

can afford no possible excuse for the selfish indolence of an inactive fatalism. Rather is there imposed on everyone a very serious responsibility, seeing how much the destiny of coming generations is in the power of the present generation. "Neither the evil nor the good which a man does is interred with his bones, and long after the individual has gone to sleep posterity may be receiving the benefits of his virtues or paying the penalty of his vices."

In 1865 Dr. Maudsley reviewed several French articles on "Syphilis and Disease of the Brain," and in this article he gives his opinion on the pathology of brain syphilis. It is noteworthy that it was twelve years later that Dr. Julius Mickle, reviewing the work again of foreign authors, came to much the same conclusion as that formed by Maudsley. In this article he recognises the gross results on the brain produced by syphilis—the syphilomata of the membranes and the vascular changes. And he shows how external symptoms only in part represent the deep disease, and that even the microscope cannot reach the bases. In the cases of brain syphilis recorded we recognise typical examples of general paralysis, and Maudsley recognises that paralysis and dementia result from syphilitic disease of the brain. But he admits that these symptoms certainly do not depend upon the more coarse and visible changes which are found either in the membranes or in the vessels. He recognises fully that parental syphilis may cause all forms of mental defect in the progeny, although, of course, he did not know or recognise the adolescent forms of general paralysis. Thus we find that, while recognising syphilis as a cause of many diseases, its intimate connection with general paralysis and locomotor ataxy had not yet been made clear to him.

I have, thus far, traced the early work of Maudsley, and now I can refer our readers of the *Journal of Mental Science* to the numbers of the Journal during which he was editor, when he and the late Sir Thomas Clouston left very marked evidence of their distinguished editorship. I feel that it is not for me, here at least, to refer in any detail to his main literary work as represented in his books on the Physiology and Pathology of Mind, on Responsibility and Conduct, on Body and Will, on Natural Causes and Supernatural Seemings, as they will probably be referred to by some other writer. I must, however, more fully refer to his last works as evidences of the maintenance of all his powers and grace to the very end. Without doubt he contemplated his end, as we shall see in referring to his later writings.

His last publication, published at about the time of his death, was *Essays on Religion and Realities*. This is a very concise exposition of his beliefs, and also the results of his life's experience. His essays on Old Age, Death, and Life are very clear expositions of his own desires and conclusions. He certainly looked on death as a friend

rather than as a foe. He writes : "With all, Nature has the last word to say, and says it alike to ants and men. They must learn to go into the dark, without fear. It seems to be the right fulfilment of an individual's destiny upon earth not to trouble himself greatly about what he can do, but to do what he can. Try as he will, no one can elude the fate of his hereditary antecedents whose fixed bond and silent memory are latent in him, and may, on the occasion of a fatal evoking crisis of danger or other mental condition, show openly. Implicitly in his nature the wills of his forefathers have silently acted from all eternity to make him what he is." In searching for what life is, he writes : "The potent influence is derived from the sun, which is the light of life, as it always has been." His sun-worship is distinctly interesting, and is thus expressed : "No duly instructed and competent thinker has any difficulty in conceiving, on the contrary he easily conceives, that the perpetual bombardment of the sun's rays on a nowise inert speck of protoplasm must excite and maintain its growth and continue to do so in increasing proportion as it grows in bulk, just as such bombardment makes the pear grow and ripen. The sun is visibly the light of its life, as it is of all life, under its genial radiance. In the Spring, when the warmer rays are felt, the tender grass shoots up, the leaf puts forth its prophetic buds ; the fish in the pond rises from its winter quiescence, the fly wakes from its suspended animation in the crevice of the wall, the frog croaks in amorous cry from the ditch, the bird pours forth its rapturous melody, and the young man's and maiden's fancy turns pleasingly to thoughts of love. All Nature feels and with one consent responds to its vivifying rays." The whole essay is eloquent and instructive.

Another essay, that might be called the essay on Pontius Pilate, is devoted to Truth. This essay gives, in brief, Maudsley's faith. It shows his strength, his beauty of language, and also, I think, his limitations. He makes it clear that Pilate represents all thoughtful minds, and that there is no ultimate truth unless it rest in Nature deeply hidden and hard to find. He, in his usual cynical way, laughs at the religious beliefs of men as representing phases of evolution. As he says, men invented, fear fashioned false fictitious causes to account for ills which they suffer, and by servile worship hope to escape. He points out how each so-called truth should be the stepping-stone only to the next. "Let man apply himself, with all reverence, to Nature, as much of knowable Nature as he ever can know. There must always be a vast amount which he can never know, and thereafter rest in the quiet conviction that he is thereby doing his best to justify his existence on earth, even though that existence has been at last a vanity and often a vexation of spirit." He has very little sympathy, when referring to religious matters, with the mystics. He describes them as knowing

little or nothing of physical forces and their natural effects in an inviolable system.

The last essay is on "Pessimism and Optimism," and a special interest of this essay is that it first appeared in the *Journal of Mental Science* for January, 1917, a very small addition having been made to the article in the final production. He points out, pretty clearly, his view that though in life and living there are miseries enough in the world, yet, after all, there are compensations. He again points, in this, to his longings for truth, and he recognises that truth is variable, and that there is no such thing as a perpetual or universal truth. Truth, he says, is a pleasant abstraction, a visionary, an ever-receding ideal to be pursued, the particular truth changing from day to day. The pessimist observes sincerely, thinks fully and feels deeply, unlike, in that respect, the optimist, who is exultant in the joy of living, seeing lights available for human guidance in the gloomy vale of tears, his faith the greater and reason the lesser light. That is the still disputed and unresolved question, which the optimist answers by inspiration of feeling, and the pessimist, less confidently doubting, by the daylight of reason. A true reflective optimism will surely demonstrate that life, rightly considered and rationally governed, is not only worth living, but capable of incalculable improvement.

And now, having laid before the reader an outline of Maudsley's literary products as exemplifying his opinions, I feel that, though this has been done imperfectly, yet it has been done conscientiously, and with a faint appreciation of the great man he was.

And so there passes from our sight a powerful and graceful influence, one with deep human sympathy, masked, to some extent, by reasonable cynicism. His influence was wholly for good, though one feels, with all the poetry and beauty of his writings, there is a want of some definite faith, as felt, I think, by himself when we read what he thinks, that reason cannot reason about it, the fact cherished as a sacred mystery, which can be only embraced by minds extraordinarily and specially graced. Their intuition of feeling is, however, absolute assurance. And so we leave his influence to spread, as were his ashes, on the land he loved.

G. H. SAVAGE.

The following notice has appeared in the *British Medical Journal*:

"Henry Maudsley came of a yeoman family long settled in Yorkshire near the border of Lancashire. He was born on February 5th, 1835, the third son and fourth child of Thomas Maudsley of Rome, near Settle, Yorkshire. He attended Giggleswick School, but when twelve or thirteen, at the suggestion of his uncle, Dr. Bateson, at one time

medical officer of health for Southwark, he went as a private pupil to Mr. Newth of Oundle, Northamptonshire. From there he matriculated in due course at the University of London, and, again on the advice of Dr. Bateson, was apprenticed to the apothecary at University College Hospital, Mr. Clover, afterwards the well-known anæsthetist. His career at University College and in the University of London was very distinguished. He was the first in most class competitions, and carried off ten gold medals; he also took the University Scholarship and gold medal in surgery when he graduated M.B.Lond. in 1856. Still he was not reckoned a diligent student, and often seemed to his teachers less interested in science than in sport, becoming, indeed, an authority on cricket. But his brilliant intellect carried all before it. At first he thought of becoming a surgeon, and was house-surgeon at University College Hospital to Mr. Quain; afterwards he contemplated entering the Indian Medical Service, and in order to fulfil the regulation requiring candidates at the examination to have had experience in lunacy, he took an appointment in the Essex County Asylum. This accidental circumstance may be said to have determined his career, for after a short period at the Wakefield Asylum he became, at the age of 24, medical superintendent to the Manchester Royal Lunatic Asylum, Cheadle, in 1859, an appointment which he retained until 1862, when he went to London to try his fortune. He had already written some essays, including one on "Hamlet," which had attracted the notice of Dr. John Conolly, who at that time was superintendent of Hanwell Asylum; he had a small private asylum near by, and Maudsley was resident physician there for a time, and afterwards married Conolly's youngest daughter. Soon after settling in London Maudsley was appointed editor of the *Journal of Mental Science*. Two years later he became physician to the West London Hospital, Hammersmith. He was appointed professor of medical jurisprudence at University College, London, in 1869, and retained the chair until 1879. He early attained success in the practice of his speciality, and contemporaneously became well known as a writer, by a series of books which were not only of high technical distinction but appealed to the more thoughtful section of the general public. In 1866 he published his first large book on the *Physiology and Pathology of Mind*, which has been described as epoch-making. In 1874 he published a book on responsibility in mental disease. Afterwards he rewrote his early book, and issued it in two separate volumes—the one in 1876, on the physiology of mind, and the other in 1879, on the pathology of mind; this last volume reached a second edition in 1895. In 1883 he published *Body and Will*, and in 1886 *Natural Causes and Supernatural Seemings*, a book which reached its third edition in 1897. Another book was *Life in Mind and Conduct* (1902), and his final work, which may be said to embody the philosophy

of his long life, entitled *Organic to Human, Psychological and Sociological*, appeared in 1917.

"He became a Fellow of the Royal College of Physicians in 1869, and, we believe, was at the time of his death, both by age and seniority, the fourth on the list. He delivered the Goulstonian Lectures in 1870 on body and mind. He received the honorary degree of LL.D. Edin. in 1884, and was an honorary member of the Medico-Psychological Society of Paris, of the Imperial Society of Physicians, Vienna, and of the Medico-Legal Society of New York.

"His interest in the work of the British Medical Association is shown by the fact that he was vice-president of the Section of Psychology at the annual meeting in Newcastle in 1870, and president of the same section at the annual meeting at Birmingham in 1872. In 1905 he delivered the address in medicine at the annual meeting at Leicester. This address covered a wide field and contained the germs of his later book, for he looked forward then to the ultimate levelling of all artificial partitions, to the recognition of inorganic, of organic, and of spiritual nature as grades in a continuous scheme woven together by the golden thread of evolution. But it also dealt in a philosophic spirit with the practical problems underlying the prophylaxis of disease, for, specialist though he was, Dr. Maudsley took care to keep himself acquainted with all movements in medicine.

"Dr. Maudsley may be said to have retired from practice in 1903, when he paid a visit to Australia for the purpose, as he said, of 'seeing how cricket was played.' He retained his mental faculties and the clearness of his intellect to the very last, and had just finished the revision of the proofs of a volume of essays. He had been failing in health for some two or three months, but died peacefully in his chair on January 24th after a few weeks of confinement to his house overlooking Bushey Heath, not far from Harrow, one of the last of the untouched heaths near London.

"We are indebted to Dr. F. W. Mott, F.R.S., for the following tribute to Dr. Maudsley's life and work :

"By F. W. MOTT, F.R.S.

"At the age of 30 Maudsley's philosophical mind revealed itself to the general public by the publication in the *Westminster Review* of a remarkable essay on 'Hamlet.' He had been previously known to the profession by a number of original articles in the *Journal of Mental Science* under Dr. Bucknill's editorship, by whom he was nicknamed 'the young philosopher.' Is it not strange to know that he harked back to his grandfather, who was notable in the countryside for his sayings, sardonic and sarcastic, which had earned him the soubriquet of 'the old philosopher.' Henry Maudsley's next most notable work was

the *Physiology and Pathology of Mind*, published in 1867 ; and as early as this he declared his aim to be—

“To treat of mental phenomena from a physiological rather than from a metaphysical point of view, and to bring the manifold instructive instances presented by the unsound mind to bear upon the interpretation of the obscure problems of mental science. Also to do what he could to put a happy end to the inauspicious divorce between the physiology and pathology of mind.

“I was informed by a very eminent physician that upon reading that work when he was studying philosophy and law as a young man at Oxford, he determined to take up medicine, and especially that branch relating to disease of the nervous system. Thus the seed soon fell on fruitful ground, and during the last generation Maudsley's name has been pre-eminent in all that pertains to mental science. Indeed, it would repay the present generation to read his later separate works on the *Physiology of Mind* and the *Pathology of Mind*, which are referred to frequently by Charles Darwin and by Ribot, and many other great contemporaries of his. William James, the author of *Principles of Psychology*, recommended his students to read Maudsley's *Pathology of Mind*. One of the most interesting chapters I know, and from which I have gained much valuable information, is on ‘The emotions or affections of mind.’ It is prescient and original in thought, and is particularly interesting at the present time when emotional stress is operating on a large part of civilised humanity. One passage in relation to modern conditions of shell-shock may be noted :

“To all appearances a violent emotion may react as a strong physical shock to the nervous system, for it may produce convulsions, fainting, loss of sensation, paralysis of movement, deafness—exactly the effects which a strong electric shock may produce. We have not then to do with mysterious self-determining agencies ; we have to do with phenomena which, complex as they are, will eventually receive a complete analysis.

“In a copy of this work which he presented to me he said : ‘The quotation-notes at the end of chapters might, at any rate, be interesting.’ These quotations and the references show his extraordinary knowledge and wide reading in philosophy, whence he got the broad grasp of science as applied to the physiology and pathology of mind, and how he has analysed and woven these into his work in a most lucid and convincing way, so that it has become his own fabric, and not a patchwork of ideas and thoughts of others.

“The same might be said of his book *The Pathology of Mind. Responsibility in Mental Disease* was another work which aroused a great deal of attention, and was regarded as a standard book on account of its practical application to medico-legal questions relating to insanity,

crime, and responsibility. When Dr. Maudsley was lecturer on medical jurisprudence at University College, I well remember his coming in and reading a case of mistaken identity from the *Times*, and commenting upon it in a way that immediately attracted the attention of the students by his originality, humour, and critical insight. His latest work, *Organic to Human*, embodies his philosophy, which may be summed up in the principle of unity of the human organism and its continuity with the rest of Nature's processes. Borrowing his own words, it may be said that having done diligently the work which it came in his way to do for a livelihood and fulfilled his life-function in *the sincere utterance of himself*, Maudsley has left his philosophical and philanthropic work to the fate of time and events, well knowing that when all is said—

“Thought is the slave of life, and life the fool of time,
And time that takes survey of all the world
Will have a stop.

“The Maudsley Hospital.”

“Dr. Maudsley in 1907 communicated to me his desire to give £30,000 to the London County Council if it would build a hospital for the study and treatment of acute mental cases. I mentioned the matter to Sir John McDougall, who pointed out to me the desirability of such a hospital being associated with the University of London; consequently I drew up a scheme, and this was supported by Mr. Balfour and Sir Arthur Rücker, the late principal of the university. The offer was then communicated privately to the chairman of the London County Council, and in December, 1907, Dr. Henry Maudsley put before Mr. H. P. Harris, who was then chairman, his scheme for the establishment of a fully equipped hospital for mental diseases in London. Towards the cost of carrying it into effect Dr. Maudsley offered to contribute a sum of £30,000. In a letter to Mr. Harris' dated February 14th, 1908, Dr. Maudsley said that as a physician who had been engaged in the study and treatment of mental diseases for more than fifty years, he had been deeply impressed with the necessity of a hospital whose main objects should be the early treatment of cases of acute mental disorder, with the view as far as possible of obviating the necessity of sending them to the county asylums; the promotion of exact scientific research into the causes and pathology of insanity, with the hope that much may yet be done for its prevention and successful treatment; and the provision of an educational institution which should offer to medical students the opportunities of getting good clinical instruction in a class of diseases of which under existing conditions it is not easy for them to obtain a competent knowledge. Dr. Maudsley's gift was accepted, but much delay occurred before a site was finally chosen at Denmark Hill, opposite the new King's College

Hospital. The following statement submitted by the London County Council to the Royal Commission on University Education, 1913, as to clinical instruction in special hospitals, may with advantage be quoted from the final report of the Commissioners :

"In addition to the advantages which it is expected will ensue to the patients who are treated there, it is hoped that the hospital will prove of great value in the dissemination of knowledge of mental diseases and in the provision of systematic instruction in methods of treatment. The proposal includes the provision of a department for pathological research, which, it is suggested, would be accomplished most economically by the removal of the staff and equipment of the Claybury Laboratory to the new institution. It is hoped that this institution, when in being, will be in close touch with the London University and medical schools.

"The hospital was not finished when the war broke out, but to the 4th London General Hospital, of which King's College Hospital is the nucleus, the London County Council not only handed over two large Grove Lane schools, but in addition hastened the completion of the Maudsley Hospital, the whole being placed in connection and forming the Maudsley extension of the 4th London General Hospital. For the past two years or more this has formed the neurological section, and served as a clearing hospital, and for the treatment of cases of shell-shock and war psychoneuroses. It has already fulfilled a most useful purpose, which, it is to be hoped, may be extended to the civil population after the war is over. We only regret that Dr. Maudsley did not live to see this practical application of his life work and principles.

"Some Personal Reminiscences.

"In connection with the planning, building, and future objects of the hospital, I had many opportunities of becoming personally and intimately acquainted with Dr. Maudsley, and I made frequent visits to Bushey Heath. It was a great pleasure and intellectual treat to talk with the grand old philosopher, and after dining and spending the evening with him, I would come away sometimes humbled but always mentally refreshed. No matter what subject we talked upon I always learnt from him ; even upon technical matters of which I had more knowledge and experience, I would find his keen, critical mind ready to detect weak points in the argument, but his sound judgment seemed intuitively to tell him when the facts were adequate to support a proposition.

"To those who had not the privilege of knowing him intimately, he might seem cynical and satirical, but beneath a seeming hypercritical manner was a most kindly disposition. I cannot help thinking that at times the tinge of pessimism which he generally showed was

partly due to his having no children, and partly to an inborn trait ; for he told me that he believed a man may inherit two unblended temperaments, and that it was so in his case.

"His knowledge of character, derived from long experience and contact with men in all ranks of society in his professional capacity and otherwise, made his conversation upon politics and social problems most interesting and entertaining, for it revealed a keen insight into human conduct, and the motives activating it.

"He had a great love of Nature, and up to a few years ago he worked industriously in his garden, but he had no taste for music ; although he possessed the sense of rhythm, that of melody was lacking.

"Up to the very end he retained all his remarkable mental faculties, and his memory was marvellous ; for he would quote long passages from the great authors and poets, and show that he still kept abreast with the general principles underlying modern biological science."

Part I. — Original Articles.

The Ætiology of Crime. By CHARLES GORING, M.D. B.Sc., Fellow University College, London.

IN a recent number of the *Journal of Mental Science*, Sir Bryan Donkin contributes some important and interesting "Notes on Mental Defects in Criminals." This is an important contribution, because, with manifest sincerity, it criticises adversely an important modern idea : the idea that Criminological Science, that all Social Science, must be built upon facts, and facts only. And, apart from their general interest, these notes are particularly interesting to me, because they refer, more than incidentally, to my book *The English Convict*, wherein the validity of arguments and conclusions depends entirely upon the study and logic of facts whose value, for elucidating biological problems, Sir Bryan would appear to discredit. For this reason may I be permitted to say a few words in support of a position which has been formidably assailed ?

As a method of biological research, Sir Bryan holds, or used to hold, strong views on the subject of Biometry, which he would seem to regard, at best as an intellectual fad, at worst as a troublesome expedient for exploiting Biology in the interests of Mathematics. This prejudice, which is not shared with many other informed thinkers, has always been to me an unaccountable mystery, and I never read an article by Sir Bryan without hoping to find therein some explanation which may clear it up. In the present case I was not so disappointed as usual. On p. 31 Sir Bryan states that "the complex environment which moulds

the characters of men cannot be analysed or reasonably dealt with by statistical handling"; because, "if it be true, as Dr. Goring has proved"—through the medium of Biometry—that the facts are as Biometry shows them to be, "it must follow that there would be little, if any, reason for making efforts to reform law-breakers." In other words, since Biometry, by disturbing preconceived notions, may threaten the stability of our institutions, the employment of biometric methods is to be deprecated. But Criminology is not part of a propagandist movement for regulating conduct. It is a Science, critical of the ideas by which conduct is being regulated. And to Science, whose sole object is to derive truth inevitably from fact, any consideration, apart from this single purpose, can have no claim to relevance.

In my Government Report the genesis and growth of the so-called "criminal character" were examined by biometric methods, and the conclusion was drawn that the factors conditioning them were to be found more in the *constitution* of the delinquent than in his *circumstances*. Sir Bryan replies that, if these findings be true, certain consequences follow, and that, anyway, Biometry is not a suitable medium for elucidating the problem in question. But I hope to show that the sinister consequences affecting reform, so much dreaded by Sir Bryan, are really illusory, and also that the systematic analysis of data, by biometric or other statistical methods, is indispensable for judging probabilities, for estimating existing tendencies, for measuring the strength of associations, for obtaining, in short, that clear and well-focussed vision of ætiological processes by which alone a prudent, just, sympathetic, and efficient policy of administration and reform can ever be attainable.

Let me examine in turn the more important arguments put forward by Sir Bryan. The first point is contained in the statement already quoted, which is to the effect that, if the truth of my conclusion be admitted—that "the one vital mental constitutional factor in the ætiology of crime is mental defectiveness"—it follows as a self-evident proposition that law-breakers must continue their misconduct, and that efforts to reform them must be futile! But, surely, it would be as reasonable to affirm that when disease has a constitutional origin it must, on that account, be incurable! The conclusion, in a word, does not follow from the premises. The premise from which we start is the statistical fact that *inferior intelligence is associated with law-breaking*, which, stated inversely, is the same thing as saying that superior intelligence is associated with law-keeping. Consequently, if from the first statement of the fact we permit the conclusion that law-breakers, because of their lower intelligence, must go on breaking the law, we are bound to conclude, from the second statement of the fact, that people of higher intelligence must, by virtue of their quality, go on keeping the law—a

deduction that is patently inadmissible. The argument is also fallacious in another respect: it is an appeal to the emotions, it is an appeal in favour of the notion of an *environmental* origin of crime, and of the theory that efforts at reform based upon this notion can alone be effective. But, surely, if one thing is clear, it is this: that whatever may be postulated about criminal responsibility and reform must apply, with equal truth, whether crime originates from the corrupt or defective nature of the criminal, or whether it be traced to its origin in the malign influence of the position in which he is placed. If, when crime is due to nature, and not at all to circumstances, we are forced to conclude that the criminal acts not wilfully, but under strict necessity imposed by his constitution, we are, by parity of reasoning, also bound to conclude that, when crime is due to circumstances and not at all to nature, he again acts without any choice in the matter, but under strict necessity imposed by the force of circumstances. Accordingly, in neither case can the criminal be held responsible for his actions; in neither case will he be amenable to reform. According to this reasoning, whose prime fallacy is to ignore the existence of the human will, we can brought up against a doctrine of sheer fatalism.

It seems likely that Sir Bryan sees the possibility of this *reductio ad absurdum* of his reckoning; because, before making his pronouncement, he formally disavows the spectre of fatalism, whose liability to haunt the human heart he evidently understands. The formidable logic with which he there lays the ghost is in contrast with the unsound reasoning when he attempts to raise it again in order to influence opinion in favour of an environmental origin of crime. On the one side we are told that deterministic doctrines have foundation neither in personal experience nor in the observation of the conduct of men; and we have the explicit injunction that "the dispute about free-will does not concern the matter in hand," that "the most thoughtful student of crime and criminals need not trouble himself about it." On the other side, and with this argument still drumming in our head, we are led to infer that biometric conclusions based on observation and experience, would, if true, lead direct to a doctrine of fatalism, whose avoidance, by adopting an environmental theory of crime, is the chief thing the thoughtful student need trouble about. These two statements are on the face of them contradictory. They disclose a misconception of the nature of scientific predictions. They exemplify how inexplicably confused the notion of causation has become with the kindred idea of association.

A chief aim of Science is admittedly prediction: the predicting of future events from past experience. At the first blush, it seems plausible to argue that what is predicable must be inevitable; and that what is inevitable must be predestined. But the lurking fallacy is easily

revealed. Scientific prediction is only inevitable *in certain conditions*; and therefore must always deviate, and very often must depart entirely, from predestination which is, *ex hypothesi*, totally unconditioned. Thus even in exact science, prediction, based on knowledge of causation, is a very different thing from predestination, with its signs and portents of inevitable and unavoidable destiny. In the biological sciences, which are, and always must be, far from exact, the two are entirely dissimilar. Here, one event, in a universal sense, rarely determines a second. The search in this field is not for causes, but for tendencies or associations; and prediction, based on a knowledge of tendency, is again vastly different from prediction, based on a knowledge of causes. In the first place, its value lies not in application to individuals, but to individuals *en masse*. In the second place, the process makes no pretence to forecast specifically the occurrence of individual events: fore-knowledge of the definite probability of their occurring is all it pretends to provide. In the third, last, and most important place of all, the accuracy and legitimacy of prediction, based on a knowledge of association, depends entirely on the conditions governing the association remaining constant. Because intelligence and crime are associated in conditions pertaining to-day, we cannot assume that defective intelligence has always been a source of crime; and we cannot predict that it will remain so in changed conditions of the future.

It will be seen, then, that the criminological correlations upon which, in my report, all conclusions were based, make no claim to rival, and could never be twisted to correspond to, the soothsayer's pretensions at revelation; to which would be related the notion of individuals "compelled to continue their misconduct if not permanently coerced by force"; or the doctrine, preached by Lombroso, of a "*criminal né*"—predestined from birth to do evil. Yet it is a profound mistake to suppose that biometric prediction formulæ, because limited in their application, have little value. Legislation, social and economic organisation, the schemes of the actuary, all practical affairs whose aim is to promote, protect, or materially better, not this or that individual, but the people as a whole, may turn, as many of them have already profitably turned, to the prediction potentialities of Biometry. And my criminological coefficients have no less and no more value than any of these. Within the prescribed limitations, predictions based on these will be definite, precise, and serviceable; and a by no means unimportant service is the knowledge they provide, not for paralysing, but for promoting schemes of reform. For the aim of reform is not to eradicate tendency; it is to strengthen the will to overcome tendency. It is not to effect a miraculous change of constitution by equalising circumstances; it is to modify conduct by strengthening the will to act decently even in the face of adverse circumstances. "Man is master

of man's estate." Despite of his circumstances, despite of himself, is the theory on which reform is based. And whatever may be his motives, proclivities, or leanings, however favourable or adverse his circumstances may be, the criminal who gives up doing evil becomes reformed. Certainly the subjects upon whom I made my inquiry were habitual criminals; and were, therefore, at the time of examination, unreformed. But this fact does not prove that reform is futile; nor does it necessarily demonstrate that future efforts at their reform will go on being futile. All it shows is that, despite of education, constitutional tendencies have prevailed; it tells nothing of the majority, whose mean emotions, jealousies, suspicions, greed, intellectual defects, and other constitutional tendencies and deficiencies have been overcome or masked by education. To-day, we are grappling with only the rudiments of the problem, whose nature becomes more clearly revealed as the relationship of habitual criminality with mental enfeeblement is more strictly defined. How full of promise for the future may be efforts in correcting or diverting activities originating from feeble-mindedness, is shown by the effectiveness of regulations laid down for the treatment of mental defectives in prison. No one would suppose that the classing of a prisoner as weak-minded affects any miraculous change in his constitution or character. Yet when so classed, the immediate change in his conduct is indisputably manifest. Within my experience a modern idea of the mental defective criminal as a soulless husk of a man, without will, with capacity only for doing evil, uneducable save for breaking the law, drifting aimlessly along a course of least resistance always towards evil, a Frankenstein monster with every human essential omitted—this imaginative portrait of the criminal mental defective is a conception which, when contrasted with my experience of the actual man, appears entirely detached from reality. In my experience, the habitual criminal, even when classed as mentally defective, and despite his low level of intelligence, is far removed from the pathological imbecile he is often portrayed to represent; he has capacity for useful activity as well as for doing evil; he is amenable to good, as well as to bad, influence; he by no means contradicts the general truth that, to make a law-abiding citizen, two things are needed, capacity and training. The existence of the habitual criminal to-day proves the failure of existing measures to reform all criminals; but it does not prove the futility of reform. What it does point is the urgency of our immediate task: which is to find the appropriate penalties, discipline, scholastic education, or other form of supervision and training best adapted to mask the disabilities, and cherish the potencies within every individual, for keeping their activities within the law, and for playing a useful part in the world. For, when all is said, what are the facts? We know that criminal action is largely due to lack of intelli-

gence. We know that the most unintelligent activities can be diverted into useful channels by discipline and training. We know that the activities of actual mental defectives may be, and in fact every day are being, diverted in prison—surely, to utilise again Sir Bryan's quotation from Dr. Samuel Johnson, "there's an end on't."

The next point in Sir Bryan's criticism is a statement to the effect that it may be laid down in advance, as an *à priori* proposition, and even despite statistical evidence to the contrary, that environmental conditions must of necessity have a determining influence on crime. Before proceeding to deal with this statement, I should like to say one thing. I have never pretended that my systematic study of *some* environmental factors was sufficiently exhaustive to justify a general conclusion that crime is uninfluenced by *any* environmental condition. My own statement was as follows: "between a variety of environmental conditions examined and the committing of crime *we find no evidence* of any significant relationship." This does not claim to be a last word on the matter. It does not claim that because some factors are unrelated to crime therefore any relationship of this kind is, or must be, non-existent. It does not deny that when other conditions come to be examined, clinching evidence of existing relationship may then emerge. All it affirms is that, in my own particular inquiry, no such evidence had been discovered; its only claim is that, until such evidence is forthcoming, judgment must be suspended. If evidence does exist, let it be produced. In the absence of evidence a mere rehearsing of belief is idle. That Sir Bryan will sympathise to some extent with the truth of these principles is revealed by his own statement: "The very posing of this question"—whether the criminal is a product of heredity or environment—"leads to irrelevant and unnecessary disputes in many and varied fields; and it lies at the root of great confusion in much that is written on the causes of criminality." With that statement I heartily agree. And I also concur with the observation that "many grounds of literary dispute would vanish on the attainment of greater precision in the meaning of the terms employed." That is one reason why Biological Science has profited enormously from Biometry, whose characteristic feature is precision of terminology. As biological problems have found expression through the medium of mathematical symbols and formulæ, less and less have they been centres of verbal disputation and literary wrangling, which more and more have been replaced by reasoned criticism, based on definite and stated grounds. It has been said, as a merit of Mathematics, that they provide no scope for dilettanti. Mathematics have the additional merit of replacing the frequent vagueness of verbal expression by a symbolism whose meaning is precise, unvarying, and always unambiguous. Moreover, when the conditions of a problem are stated in, and reasoned about through,

the terms of an algebraical formula, everyone knows precisely what is being aimed at, and with what success the target is reached. This may not appear a great gain; yet, within its limitations, it is a distinct advance on verbal disquisition and reasoning, which rarely convey the same shade of meaning, and often transmit totally different notions, to different people. Personally, I never had a clear and well-focussed vision of environment and heredity problems until I viewed them through the medium of correlation and prediction formulæ. And, certainly, it is difficult to believe that the formula employed by me, with the facts and figures and 2-and-2-make-4 reasoning on which they were based—all of which were published in my report—can have so obscured the issue upon which I was engaged, or have left its admitted limitations so vaguely and indefinitely prescribed, as to justify the following criticism: "Even if, for the sake of argument, the validity of methods employed and conclusions arrived at be assumed, it cannot possibly be held that any significant proportion of the innumerable influences that act on all men from infancy to age, for good or for ill, and contribute so largely to the make-up of each of us, have been eliminated by the inquiry we have been considering."

I must confess I find this outburst of Sir Bryan Donkin astounding! Surely no one could dispute that influences which act for good or ill on *all* men, from youth to age, etc., must act similarly, for good or evil, on all *criminal* men, whatever their age may be, whether they be in prison or out of prison, whether they be reformable or incorrigible. For instance, the existence or non-existence of food to eat, of air to breathe, of a world to live in, of buildings that may burn, of people who may be robbed, of institutions that may be defrauded, are, all of them, influences for good or evil; and they are, all of them, influences on crime and criminals: in the sense that without air to breathe there could be no breathing criminals; without the influence of food no men could live to become criminals; without material potentiality for committing criminal acts, no crime could be committed. But in no rational, or less equivocal sense, could these essential conditions of life itself, in any of its manifold forms, be described as part of the force of circumstances determining the particular form of being known as criminality. Accordingly, we can assume that those circumstances which are *indispensable for any form of human activity* are not the *particular* ones whose influence, Sir Bryan warns us, still survive my investigation. What, then, are the influences to which he does allude? If he has any circumstances in mind, why does he not plainly specify what they are? An unconscious answer to this question may, perhaps, be found in the following statement of Sir Bryan: "The various factors that contribute to the production of a criminal cannot be disentangled from the totality of the complex environment which moulds the characters of men," and

this environment itself "cannot be analysed or reduced to such items as can be established, or eliminated, or reasonably dealt with by statistical handling." The reason then, for Sir Bryan's reticence in this important matter, is clear. He does not specify the conditions to which he refers because, being unanalysable and irreducible to specific items, they cannot be specified. But, in this case, these conditions, if existent at all, can have little practical significance for the criminologist. Sir Bryan defines criminology as knowledge that "may assist in the formation of *practical* measures for the prevention of crime and the treatment of criminals." What practical measures, we ask, can possibly result from the knowledge that crime depends upon circumstances which, *ex hypothesi*, are unanalysable and cannot even be nominally specified?

I think it is important to assert that the environmental influences studied by scientific investigators, and the influences of environment as envisaged by reformers, humanitarians, and other propagandists, are two separate things which are often quite unrelated to each other. The former are causes or associations, whose effects or strength, being universal in character and variable in degree, can only be estimated by investigation. The latter are *incidents*, whose effects upon individuals, being self-evident, are not matter for scientific inquiry. The humanitarian exclaims: "All individual men are influenced for good or ill by the incidents of their environment." "Quite so!" replies the scientist; "that is an axiom which is presupposed by the investigator, whose object is not to demonstrate a self-evident proposition, needing no demonstration, but to search for a truth which only by investigation can be discovered: *viz.*, the *varying* extent to which, in the long run, men are influenced for good or ill by *varying* the conditions of their environment." Thus every individual child is influenced in some way by education. Yet, from this indisputable fact no one can assert, as an *à priori* proposition and without inquiry, that failure in class or life, or in becoming a law-abiding citizen, must necessarily, in the long run, be due to lack of some particular form or degree of education, under the influence of which success would be equally assured.

It will be seen, then, that in one sense Sir Bryan is right when he says that "the innumerable influences that act on all men for good or for ill cannot be dealt with by statistical handling." They cannot be dealt with by statistical handling because, their effects being self-evident, they are not material for any sort of scientific handling. For Science is not concerned with the cataloguing of series of incidents affecting the careers of individuals. The business of Science is to discover causes; and causation, as investigated in the laboratory, is always the universal relation, which cannot be revealed by representation, however vivid, of particular incidents. That is to say, the

causes there traced are not those affecting any one thing, but things in general ; they are not the innumerable incidents affecting for good or ill individual lives ; they are those general truths which are described within that category of Science technically known as *Ætiology*.

I am, of course, aware that incidents affecting individual persons or things are often described popularly as causes ; and, if it pleases people to regard any incident as a cause, there is no reason why it should not be called by that name : provided one is not misled into attaching scientific value to the term. To describe thus particular events is certainly justifiable ; because any event, however insignificant, is one out of what Huxley described as "the great series of causes and effects which, with unbroken continuity, comprises the sum of existence." And to single out any one event from a series and to attribute causative value to that, may serve many a good or bad purpose. Thus, for the sake of assuming responsibility, a mother might attribute to her own negligence the cause of a child's taking cold ; or, in order to transfer responsibility, she might seek a causal agent in her nurse's carelessness, etc. The reasons for thus attributing a special value to particular events may be excellent. But the causes there specified are unrelated to the general truths of causation : no scientific treatise would refer to a particular mother's negligence, or to her servant's carelessness, when describing the *ætiology* of cold in the head.

Let me illustrate my meaning in some of the foregoing remarks with a case of murder which was committed by an epileptic, who was also a licentious fellow, a heavy drinker, and who suffered from the effects of syphilis. The crime was apparently a motiveless one ; and the plea put forward by the defence was that the prisoner committed the act when in a transient state of epileptic unconsciousness. According to the evidence, this was a just plea ; and consequently, for administration of justice, it was justifiable here to select the factor of epilepsy from the series of causes and effects of which the crime was the culminating episode, and to describe epilepsy as the cause of the crime. This selection was justifiable, because its object was not to advance scientific knowledge, but to show that at the time of the offence the prisoner's will was in abeyance, and his mind free from guilty intent. To Science the selection of epilepsy, as the cause of this particular crime, contributes nothing. That is to say, this representation of a *particular* relationship does not in itself increase our knowledge of the *general* relationship between epilepsy and crime : it is without value for purposes of prediction. For the scientific purpose of predicting crime from a knowledge of epilepsy, the describing of this man's epilepsy as the source of his crime is of no more value than would be the attributing of its cause to his alcoholism, his syphilitic disease, his licentiousness, the fact that he carried a revolver, the fact of

the stupidity of his victim, or an indefinite number of other factors. For it is the sum of all these factors which was the real cause of the crime ; and when prominence is given to any one factor by describing that as a cause, the existence of all the others, as an unvarying background, is, as it were, assumed. The scientific problem of causation is to trace how and to what extent two events, A and B (*e.g.*, epilepsy and crime) are connected in the picture, independently of its ever-varying background ; and this is provided by the conception of association which, in the biological sciences, replaces the physical concept of causation. From data of the several conjunctions, namely, (1) A with B ; (2) A without B ; (3) B without A ; (4) A and B both absent, we measure the extent to which changes in the A event are followed by corresponding changes in the B event. In other words, we find the law that governs the relationship between A and B ; and the correlation formula expressing it is a truly scientific statement, because, when the tests of science are applied to it, it will be found to answer true. It follows that the scientific problem of the influence on crime of the force of circumstances is essentially a problem of correlation, which can only be solved satisfactorily to Science in one way, namely, by measuring the extent to which specifiable and explicitly specified environmental conditions are correlated with crime. My own investigation consisted almost entirely in measuring these correlations for several representative conditions which have been accepted as criminal influences. And because the result was practically zero in almost every case, I formulated my conclusion that no evidence had emerged from the investigation to show that crime, to any appreciable extent, was influenced by the force of circumstances. I then went on to trace and explicitly define, in similar fashion, the influence of heredity on crime : which brings me now to the third point of Sir Bryan's criticism of my work which I want to discuss.

I find Sir Bryan's arguments, which refer to my biometric treatment of the heredity and crime problem, evasive. He employs also, it seems to me, unsubstantiated charges against the Biometric School. I will produce these charges *seriatim* with my reply to each. The first is stated in these words : "The two diverse schools," *i.e.*, the Biometric and Mendelian, "appear to be at one in placing a sharp dividing line between inborn and acquired characters." Now I am not competent to speak with authority on behalf of Mendelian doctrine, but as a biometrician I am in a position to say this : that the Biometric School is not inclined to place sharp dividing lines between categories ; and it certainly would not draw one between such highly imaginative and artificial categories as those described by authors as "inborn" and "acquired." Indeed, the case is just the contrary. For what are the *ifferentia* which, in fact, do separate by a sharp dividing line the

doctrine of Biometricians from that of their more ambitious, but perhaps rather more confused, *confrères*, the Mendelians? It is this : that Biometricians refuse, and always have refused, to recognise any real existence in the unit characters, unit compartments, and sharply partitioned pigeon-holes which are at the basis of Mendelian theory. The characteristic feature of Biometric doctrine is that Nature distributes her attributes in continuous quantitative series. The tall and the short peas of Mendelians are not, according to Biometric teaching, specific entities of one definite degree : there is a wide range of tallness in the one variety, as there is a wide range of shortness in the other. And, very similarly, Biometricians recognise no line of demarcation between Albinos and those who are without the Albinotic character ; or between criminals and those who are without criminal tendency : Albinos and criminals merging into their opposites by insensible gradations. To accuse, then, the Biometric School of drawing a hard and fast line between categories is, of course, a mistake.

Equally mistaken is the second charge against the Biometric School of "employing the terms 'inheritance' and 'reproduction' as synonymous." Nowhere in biometric literature, certainly not in my Report, would these words be found used as if they were interchangeable. Sir Bryan says that "the Biometric School has made several elaborate investigations into heredity questions and draws its conclusions from large numbers of observations gathered and statistically studied." This is the fact. But what in each case has been the object of the investigation, and what the nature of the observations? In every case, without any exception, they have been the tracing of ancestral resemblance from data of ancestors and offspring. These investigations were inspired by the genius of Sir Francis Galton, whose ideas of heredity, which have been adopted by those carrying on his work, were defined in his *Law of Ancestral Resemblance* : a title which speaks for itself as to the meaning adopted of heredity. The title, at any rate, disposes of the allegation that Biometricians confuse reproduction with inheritance, which is a law of reproduction ; and the nature of the investigations, referred to above, prove conclusively that to Biometricians the law of reproduction called Heredity means one thing, and one thing only—Ancestral Resemblance. I don't maintain that these two notions are never confused ; they frequently are. All I assert is that they have not been confused in published works of Biometricians, whose refrain, emphatic and unvarying, reiterates monotonously the fact that inheritance means ancestral resemblance—nothing more and nothing less. Nearly all misconceptions about heredity arise from an inability to hear, or from refusal to listen, to the cardinal fact of this refrain. Grasp this fact, and you will see, for instance, how stupid is the widely spread misconception that inheritance of a character, such as criminal

tendency, must nullify efforts at criminal reform. It is as foolish to say that a criminal is incorrigible because he is like his criminal father, as it would be to deny possibility of his reform because he is like any other criminal who is not his father. For parental resemblance does not imply annihilation of the human will, whose incalculable power of conquest over tendency is at the source of all reform. I repeat: the essential fact to be grasped is that heredity means nothing more and nothing less than ancestral resemblance. Fix that fact well in mind, and you have a key to many difficulties of the heredity question. That is the sum and substance of Biometric teaching; and, in the face of it, to say that Biometricians treat of inheritance and reproduction as if they were synonymous is manifestly inaccurate.

The next charge is more difficult to repudiate because of the ambiguity of some of its terms. Here it is verbatim: "The Biometric School place a sharp dividing line between inborn and acquired characters; it employs the term inheritance and reproduction as synonymous. *Thus*, the characters or qualities this School investigates are found by them to be inherited or inborn; and a reproduced quality means, in fact, for this school a purely inborn and transmitted quality." Why the word "*thus*," connecting this charge with the two preceding ones? What is the meaning of this thusness which transfers responsibility to the Biometric School for an unthinkable conception of a purely inborn and transmitted quantity? There are, of course, such things as figures of speech; and figurative language is often as useful as, and is sometimes more illuminating than, literal speech. Yet the expressions, "purely inborn character," "transmitted character," which were probably not intended by their real authors to be interpreted literally, are being used here as descriptive terms in a highly technical subject; and figurative expressions, when used technically, can only perpetuate the confusion of thought that may have engendered them; and consequently, they would be studiously avoided by the Biometric School, whose characteristics are clear thinking and precision of language. Biometric descriptions refer invariably to facts of experience; Biometric investigation, as Sir Bryan admits, "draws its conclusions from large numbers of observations" which are the recorded results of experience. Now, observation and experience show us heredity not as a power for transmitting, or withholding transmission, of any definite thing such as a purely inborn quality; they show us heredity as a tendency only: as a tendency to reproduce a more or less approximate likeness of that thing. Accordingly, without calling upon figurative expressions, the Biometrician is able to describe his experience of heredity influence in simple, literal, and plain language, as the observed tendency of every newly created being to develop the likeness of those within, and the relative unlikeness of those without, his own

line of ancestry. Descriptions of characters as "inborn" and "acquired" are not only not employed, but they are studiously avoided, by Biometricians. And in this studied boycott of figurative terms we have the exact opposite of what Sir Bryan states to be the case, namely, that the characters or qualities the Biometric School investigate are found by them to be purely inborn or transmitted qualities.

The fifth charge Sir Bryan brings against the Biometric School is that "as regards heredity it necessitates no further assumption than that sameness of reproduction in the case of a given quality implies sameness of inheritance." In apparent contradiction to previous statements, Sir Bryan admits here that Biometric Science regards heredity as *sameness* of reproduction, which is a different thing to reproduction, and might mean the same thing as ancestral resemblance. The allegation, however, now is that ancestral resemblance is always, without further inquiry, assumed by the Biometric School to be due to one cause, namely, the influence of heredity. The inaccuracy of this statement is shown by the following passage from the Report of my biometric investigation of the problem of heredity in its relation to crime: "We only know that there is such a thing as Heredity by its effect in producing Ancestral Resemblance. The first step, then, when studying the influence of Heredity is to obtain a measure of this resemblance. It must be understood, however, that this estimation of resemblance is only a first stage towards the solution of the heredity problem. Inheritance presupposes resemblance, but *resemblance need not necessarily be due to hereditary influence*. The first step, then, in the study of criminal heredity leads only to the discovery of certain statistical facts of family resemblance. These facts alone do not in themselves provide answers to the wider questions they lead up to; these are, to what extent these facts of family history are due to the inheritance of a constitutional anti-social disposition, or to what extent they depend upon the influence of family contagion."

This concludes the indictment against the Biometric School. The remaining charges are directed against me and my particular biometric work. The first of them is as follows: "Dr. Goring's final conclusions rest upon the conception that qualities or characters are either inherited or acquired—either of a constitutional origin or produced by the force of circumstances, and that it is possible to disentangle the influence of heredity from a complication of environmental influences—which illustrates the unfitness of applying biometrical methods to all branches of biological research." What the statement really illustrates is the futility of criticising the application of a principle until the nature of that principle has been definitely agreed upon and accepted. Were Sir Bryan and I at one concerning the conception involved in heredity problems, we should not possibly be at variance regarding the fitness of

applying biometric methods for the solution of those problems. Now, what precisely Sir Bryan's conception of heredity may be I do not know. He tells us something of what it isn't—for instance, that heredity is not the same as reproduction, but he nowhere states explicitly and unambiguously what he conceives it to be. How widely and fundamentally our respective conceptions must differ is revealed in the passage quoted above. For no one, proceeding from a conception of heredity as an influence tending to produce ancestral resemblance, could profess to form an estimate of the extent of its effectiveness in any particular case without investigating the matter statistically; that is to say, without making a statistical analysis of data recording the degree of resemblance actually observed between ancestors and descendants. These data are as necessary for estimating intensity of ancestral resemblance as were observations on falling bodies essential for measuring the intensity of terrestrial gravitation. And as with the force of heredity, so with the force of circumstance. The forces of heredity and circumstance are both of them conceptions derived from experience of associations, and the only way to measure precisely the strength of associations is by the statistical analysis of data. But Sir Bryan implies that characters can be differentiated as either inborn or acquired without investigation; that, by some mystical process unexplained, character can be shuffled into either one or other of these two compartments at sight. It is clear, then, that when describing characters as influenced by the forces of heredity and of circumstance, I am performing an entirely different operation to that of Sir Bryan when he classifies characters as either inborn or acquired. In other words, the conceptions of heredity and environment on which my conclusions rest must be fundamentally different from the conceptions of environment and heredity in Sir Bryan's mind when he criticises those conclusions. And, in fact, that our respective ideas of heredity and environment do refer to entirely different realities is conclusively proved by a final pronouncement on my work which Sir Bryan makes in reply to his own question, "whether any conclusion of value bearing on the genesis of the criminal is likely to be attained by the statistical methods Dr. Goring has employed?" The answer is that no conclusion of value could be so attained, and a verdict pronounced on the final conclusions I did reach by these methods is that "these conclusions are erroneous." The conclusion that crime is influenced by heredity is erroneous, because "the fact that inborn capacities are necessary for the production of human characters is accepted knowledge; no longer a hypothesis in need of verification." The conclusion that crime is not appreciably influenced by the force of circumstance is erroneous; because a notion that "the human being, criminal or non-criminal, is the creature of his inborn capacities alone has not been proved." Could anything be more final?

Could anything settle more conclusively, once and for all, that biometric research is a futile intellectual vagary? Or else, that Sir Bryan's notion of the problem involved in the ætiology of crime is unsound at the core? And, in pursuance of this latter contingency, I think a glance at the introduction of my book will take us as far as this: That whatever his own notion of the ætiology of crime may be, Sir Bryan has completely failed to acquaint himself with the biometric conception of that problem. For it will be seen immediately, from my description of the criminal diathesis in the introductory chapter referred to, that "the hypothesis no longer in need of verification," which Sir Bryan describes as one final conclusion of my investigation, is, in reality, a postulate or starting point from which that investigation proceeded. And it will also be seen, from the same reference, that what Sir Bryan describes as a second final conclusion of my investigation, namely, that the criminal is a creature of his inborn capacities alone—this unthinkable notion was certainly not a goal which that investigation set out to reach.

Let us try to get down to the fundamentals of a problem that can provoke such complete misunderstanding. The first point, which is abundantly clear, is that the mere existence of life, apart from the form it may take or the characters that may distinguish it, the mere fact of life itself must presuppose two things. First, the influence of reproduction and development determining, through the germ plasm, a continuity of organic growth between the generations. Second, a range of environment within whose influence alone organic growth can take place. These influences upon life are assumed wherever any form of life is manifest. In the absence of either of them, or rather in the absence of reproduction and development, and in the presence of an environment extending beyond prescribed limits, organic growth ceases, and existence comes to an end. It follows, therefore, that questions connected with the formation of human characters, that all questions of ætiology, are in no way concerned with this fixed and invariable influence of both germ and environment, which is obviously indispensable for growth. In discussion of these questions there can be no real difference of opinion on these elementary facts; and any difference there may appear to be is one of expression only. As pointed out by Prof. His "To think organic beings can be built up without any environmental means is a piece of unscientific mysticism." All this, of course, is as simple as it is obvious; but it is a matter whose importance cannot be over-emphasised by statement and restatement of the obvious postulate which I repeat: when investigating ætiology problems, the facts of reproduction and development determining growth within a fixed range of environment, have no relation or reference of any kind whatsoever to our direct and immediate concern which refers to the opposition between germinal and environmenta

influences in determining not growth, but the particular way growth takes place, and the particular kind of characters which are produced as an ultimate result of growth. How is growth modified by varying germinal influences? How are the ultimate effects of growth modified, to what extent can they be stunted, or encouraged, or diverted, by varying the degree or proportions of environmental influences? These are the questions the investigator asks himself; and in seeking answers to them, he naturally turns to the observation of the senses as the only means for formulating a truly scientific reply.

In plants, and amongst lower animals, the possibilities of modifying growth by environmental means are very great. Apart from effects due to selective breeding, pronounced modifications in the growth of fruit and flowers have been, and every day are being, produced under varying conditions of temperature, nutriment, moisture, climate, etc. As the result of treatment, the remarkable variability in the produce of gardeners, working on the same material, is a matter of everyday experience. But as we go up in the animal scale, the possibility of thus modifying growth becomes more constricted; and the extent to which results achieved are due to stock, or environmental selection, becomes increasingly doubtful. Hence the innumerable questions which arise. We know that for human physical development some form of nutriment and exercise are requisite. The question is to what extent, by taking thought—by prescribing this or that *régime* of nutriment and exercise—a cubit can be added to stature, or muscular development can be increased, or obesity reduced? We know that a tendency of human tissue to become diseased would be arrested by eliminating any one of the conditions which are essential to the life of human tissue. The question is to what extent, modifications, within the range of conditions compatible with life, will arrest or encourage the fruition of morbid tendencies: to what extent will over-crowding, insufficiency of diet, defective sanitation, increase tubercular tendency; to what extent will cod-liver oil, tuberculin, or open-air treatment arrest it? We know that the criminal tendency is affected by the “environmental influences which act for good or for ill on all men,”—by all kinds of education or training, for instance. The question is to what extent the *degree* of this character ultimately attained depends on the presence or absence of some *particular* kind of training, or some *particular* form of discipline: whether any one form of education, as, for instance, primary, secondary, or reformatory school training, or the education of the streets, or the educative influence of parental example in a corrupt home, is more productive of, let us say, habitual criminality than is any other specified form of education? These are the burning questions that require answering, and that call for precise answer, in plain language, from the expert sociologist; and from the

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nature of the questions it will be realised that no amount of reflecting, of appealing to opinion, of referring to authority, of exercising dialectical ingenuity, can possibly provide the convincing and indisputable answers which are demanded, and which can only be attained in one way: namely, by appealing to, and making the best possible analysis of, experience. For what is the nature of the questions referred to? In every case it will be found that what these questions demand is an exact measure of the relationship between two variables. Consequently, for all practical purposes, problems of ætiology resolve themselves to this: as we modify one variable, what is the observed effect on another variable? In all their mental and physical attributes, and morbid states, and conditions resulting from these, how and to what extent, in all these ultimate results of growth, do human beings change, as we vary the hereditary and environmental influences which govern the growth of human beings? This is the problem of ætiology which, it will be seen, in every case, is essentially a problem of correlation. And how correlation between variables is to be assessed, save through the medium of a correlation calculus, it is not for me, as a biometrician, to say. It is incumbent on those critics who condemn the biometric calculus for solving problems of ætiology to supply that information.

In conclusion, I should like to point out that I do not discover in Sir Bryan's criticism any sense of the fact that the aim of my inquiry was not to support speculation upon what, in ideal conditions, might conceivably be a source of crime, but to discover what actually are its relations in conditions prevailing to-day. Because certain specified, but entirely imaginative, adverse circumstances might admittedly increase the production of habitual criminals, therefore habitual criminality is, in fact, a product of adverse circumstances—this seems to be the burden of a passage, which I cannot refrain from quoting, as an illuminating commentary on Sir Bryan's conception of the ætiology of crime. "I venture to think," writes Sir Bryan, "that most of us, including Dr. Goring, would agree, even in default of a demonstrative experiment, that most children and young persons from whatever stock they might have sprung, could have their normal criminal diathesis so influenced by neglect or positive training as to be actually and easily produced as even habitual criminals of various kinds." Let us admit that habitual criminals might be produced in the conditions Sir Bryan lays down. The admission would not affect the conclusions of my investigation; it would only restate a possibility which, in fact, that investigation did assume: "the possibility that environmental, as well as constitutional, factors play a part in the production of criminality." This possibility is, and always must be, a matter for investigation: never for discussion. Crime might be influenced by many circumstances; just as it might be

uninfluenced by many circumstances. Crime might be influenced if doors were left unlocked, or if streets were no longer policed; it is none the less uninfluenced by the circumstances I examined. Future investigation may reveal many criminal agencies at work which are at present unsuspected. But in the meantime, we need not let ourselves be diverted, by such speculations, from established facts. These facts were summarised in my conclusion which, despite of speculative criticism, still holds. It is that "between a variety of environmental conditions examined, such as illiteracy, parental neglect, lack of employment, the stress of poverty, etc., including the states of a healthy, delicate, or morbid constitution *per se*, and even the situation induced by the approach of death⁽¹⁾—between these conditions and the committing of crime we find no evidence of any significant relationship.

(1) At all ages of life up to fifty-five the death rates of prisoners are practically identical with the general population rates.

The Relation of Alcohol to Mental States, particularly in regard to the War. By Major Sir ROBERT ARMSTRONG-JONES, M.D., R.A.M.C., Lecturer on Mental Diseases to St. Bartholomew's Hospital.⁽¹⁾

I PROPOSE to deal with this subject in the light of present-day experience and knowledge, reflecting, to begin with, the medical opinion of to-day and afterwards that of the general public, and I propose to divide my theme into two sections: Firstly, the evident meaning attached to my title, *viz.*, the different forms of mental abnormality resulting from excessive drinking in the individual, and secondly, the different mental states exhibited, or the different points of view adopted by the community responsible for the methods of its sale and use, and, as a consequence, for the maintenance of public order. In dealing with the latter section I shall pass in review the different legal measures that have been adopted to control its sale and the various steps that have been taken to safeguard the health of the people in connection with it.

The question of the effects of alcohol upon the human organism is an important medical point, as well as being an interesting, economic, and sociological one; for it has a concern with the vitality and with the output of work of the individual, as also with his relation to the State which protects him and of which he forms a component part. As to the use of alcohol in health all experiments are in accord, and it would be useless to occupy space with a repetition of the results obtained. Broadly stated, they are that alcohol stimulates the heart and circulation; in other words, it increases the force and frequency of the pulse

and the functional activity of the nervous system, but it tends also to lower the temperature of the body, because it checks tissue changes. It is evident, therefore, that we have in alcohol a drug which can afford temporary relief in certain abnormal bodily states, but the very relief afforded in one particular direction, *viz.*, as a cerebral stimulant, doubles the temptation to its frequent use, and as the body becomes habituated to its action, and the dose has to be increased more and more, the habit of frequent stimulation grows almost of necessity into drunkenness. For this reason I am of opinion that no physician is ever justified in prescribing alcohol for its purely soothing, stimulating, or narcotic effects, and I have never used it, nor advocated its use, for the mental conditions described as painful, emotional states; because I consider its legitimate use to be for those extremely serious nutritional disturbances such as threaten the last moments of life, and in these states I have known it to prolong the life struggle. Personally, I have no sympathy under ordinary circumstances with the daily use of alcohol by healthy persons who are not beyond middle life, and even such use in health has moral and politico-moral issues which cannot be discussed here; but under conditions of unaccustomed exposure to wet and cold, when the extremities are numbed and have lost, or are losing, their proper feeling, I have been informed by both officers and men from the trenches that the "rum ration" has enabled these men to withstand the continuous exposure to intense cold and wet. This fact is not in contradiction of the physiological experience already quoted, that alcohol lowers the body temperature and has no heating power. It only means that the chill of sudden exposure, the stiffness from benumbed extremities, and the bronchitis that may follow are the result of cold, which drives the blood from the skin and the general surface of the body to the internal organs; that as a consequence of long exposure the circulation fails in the skin, the functions of which are suspended with the result that the skin ceases to excrete the body waste normally carried out with perspiration, and that these waste products are now thrown upon the internal organs, which are already in a state of passive congestion. The relief obtained is properly explained by the physiological effects of alcohol, which maintain the increased circulation and keep the external surface supplied with fresh, warm blood from the internal and engorged bodily organs. The obvious danger of prescribing alcohol in health is to induce intemperance, but it is only right to state that intemperance is also often the effect of brain weakness and brain disease; indeed, some writers have gone so far as to state that in practically all cases of mental disease associated with intemperance, the latter is a consequence of mental weakness and not the cause; a statement which is probably less than half the truth.

In regard to alcohol, chemistry teaches us that alcohol is primarily

a strong dehydrating agent. It takes away water from living matter, and, as a fixed amount of water is a necessity for the life of healthy protoplasm, this dehydrating action may prove to be highly injurious, hence its effect upon living tissues is to cause a degeneration and decay, which can be seen in the pyramidal or the essentially psychic cells of the brain, with consequent loss of their function and with marked intellectual degeneration when they are affected. The higher will power is impaired, the will loses its grip, normal inhibition is removed so that the person is easily tempted to other forms of indulgences, and we know that the great campaign of the National Council for Combating Venereal Disease cannot afford to disregard the connection between alcohol and the social evil. I have seen young officers, barely twenty years of age, whose army career has been ruined by drink and debauchery. The disposition in those who drink to excess changes into querulousness and impulsiveness; in fact, the most marked mental effect of excessive drinking is the tendency towards the development of a hostile attitude of mind, with the consequent liability to react furiously and intolerantly. Alcohol attacks the hierarchy of the tissues, for it has a special affinity for the nervous system; there is a shedding by degrees of the most highly evolved faculties; there is a loss of prevision, an impairment of the judgment, and a failure in the power of discrimination; later on the memory becomes affected, and no amount of reasoning is able to persuade the person who has got into the habit of drinking to give it up, even if it be clearly pointed out to him that he and the family dependent upon him are being pauperised by it.

It is always very difficult to estimate the exact ætiology of even the most common diseases, but it is impossible to arrive at accurate conclusions in regard to the causation of mental diseases; yet, in connection with alcohol, the Lunacy Commissioners, in their report for 1905, made the precise and definite statement that alcohol, in their opinion, was a "brain poison." Whether it be justifiable to describe as a deleterious poison an organic substance useless to the individual under ordinary conditions of health may be a matter for legitimate differences of opinion, but the Lunacy Commissioners made, in addition, the further statement that, although some counties with a comparatively low rate of insanity had a high proportion of cases admitted into asylums with a history of intemperance, there were other counties with a high rate of insanity but with a low proportion of cases suffering from alcoholic intemperance. Nevertheless, in those areas in which there is an association of intemperance and insanity, there is found also the definite association of intemperance and crime, which appears to justify the inference that in those cases where there may be a high incidence of intemperance, there will also be a high proportion of insanity and crime, and it is the considered conclusion from the definite observation of all

social workers that where there is intemperance there also are crime and insanity. It is interesting to note that when statistics as to the causation of insanity are taken over a series of years, the number of cases appearing as caused by alcohol as well as by other causes show but little variation from year to year, and it is computed that alcoholic intemperance may correctly, and without any doubt, be attributed as the assigned cause of insanity in no less than 20 *per cent.* of all males admitted into asylums, and in no less than 10 *per cent.* of all the females; and when the total number of admissions for the last year of which we have record, *viz.*, 1915, was quoted as 8,600 males and 10,000 females, we can readily see that alcohol was in one year responsible for over 2,700 cases of mental disease in England and Wales, *i.e.*, of persons who had to be compulsorily detained against their will, and who, in consequence of drink, were deprived of their social, civil, domestic, and financial rights, and of whom, it may be observed, a number will continue under detention for the remainder of their lives. It may be surmised that possibly about 3,000 persons every year become insane through drink in England and Wales.

I have referred to the difficulty there is in arriving at the exact factor of causation in mental diseases, and as may well be appreciated in this illness the patient himself is unable to assist the investigator, as, owing to the clouding of his reason, the statements he makes are unreliable, and further, the information vouchsafed by the friends does not help to elucidate the cause, for the reason that they only relate such antecedents in the history as appear to them to bear upon the illness, which are rarely either accurate or full; moreover, in many instances the cause attributed by the friends only stands in some immediate relation to the illness, and forms no true part of the cause; indeed, it often has little or no connection with it, the real factor being some inherited or acquired frailty or some weakness in the nervous co-ordination, which the friends have either minimised or overlooked or have carefully attempted to suppress. So often is this the case, owing to the stigma attaching to mental disease, that a studious effort is made by all the relations to lessen the importance of a faulty family history and to give prominence to trivial and unrelated factors having no definite causative effect. From what I may claim to be an extensive personal experience, I am more than ever convinced that in mental disease there exists some *locus resistantiæ minoris* in the brain tissue, which renders the individual more prone to be affected by circumstances which in the healthy person would have less influence; and, although several antecedents may combine in the ultimate production of a mental breakdown, it is logical to assume that any one of several causes may be the immediate agent responsible for the final breakdown. In regard to this much depends upon the so-called "immunity" or the individual

resistance shown by the person affected, and as we know, when several persons are exposed continuously to the same infectious fevers, some always escape and do not contract the infection, whilst others appear to take the disease repeatedly and to suffer in turns from almost all the other ills to which flesh is heir. No fact in biology is more striking than the difference in susceptibility to disease conditions exhibited by different persons and different races, or even by different animals. It accounts for the very different symptoms produced by the same dose of the same kind of alcohol upon different persons. We know from medical experience how in regard to drink some persons may break down from arterio-sclerosis, hæmorrhage, and cerebral softening, whilst others may suffer from interstitial changes in the glandular structures, *e.g.*, the liver or kidneys, whilst others again rarely suffer from nervous or mental lesions at all, but they break down from more gross tissue changes and become physical rather than mental cripples.

Drink in small doses is literally death to some persons, whereas others tolerate it in large quantities, and the brain worker rather than the manual labourer shows the least resistance to it. As we know, one person may become morbidly irritable and quarrelsome, another may be ludicrously affectionate, a third stupid, a fourth vain and boastful, and a fifth silly, all these differences denoting differences of susceptibility to the same dose of the same kind of alcohol. The same susceptibility to alcohol and to disease that is seen in persons is also exhibited in the history of races, *e.g.*, the native races in many parts of the world are comparatively insusceptible to yellow fever, to enteric, and to malaria; and we know the same condition to exist in animals, for dogs and goats are rarely tubercular, and rats, which are not susceptible to anthrax, are only so after fatigue or when fed upon an exclusively vegetable diet, which helps to render the blood alkaline, a reaction which favours the growth of the bacillus; we know, again, that tetanus, for instance, is never met with in fowls. These facts demonstrate that there is a natural immunity or a natural insusceptibility on the part of certain races, individuals, and animals to certain diseases which may in the same persons even vary at different ages, *e.g.*, as age advances, the immunity to diphtheria and to scarlet fever becomes more marked and definite, and this immunity may be either partial or complete. Precisely the same sort of immunity or insusceptibility as occurs in disease is met with in the use of alcohol, and we are therefore unable to foretell the particular group of neurons likely to suffer in any special case of alcoholic indulgence; nor can we foretell the progress of the symptoms when a group of neurons has been attacked; all we can assert is that for every individual there is a spot or place of weakest resistance which has been arranged for him through natural selection and heredity. For long periods of time many of the

different races have been exposed to alcohol, but the susceptible ones have been weeded out, whilst the survivors transmit their insusceptibility to their descendants, and although this is an observed fact, yet it gives us no physiological explanation of the greater immunity of the insusceptible ones. It is possible that more proteolytic enzymes are produced by the organs of one individual than by those of another in order to destroy or to modify such a toxin as alcohol, with the result that a greater immunity exists in one person than in another. Whether the explanation of this phenomenon be afforded by the *humoral* hypothesis, which ascribes immunity to the action of certain substances existing in or generated by the body fluids; or the explanation be afforded by the *cellular* theory of the more active phagocytic action of the polymorpho-nuclear leucocytes; or by the *cellulo-humoral* theory of the production of alexins or bacterio-lysins in the blood, cannot now be discussed; but it is a well-ascertained and an incontrovertible fact that alcohol acts differently upon different persons, and this personal equation of the individual should be taken into consideration not only when discussing the symptoms of alcohol, but also when urging legislation for the control of its sale. I have mentioned the subject of immunity in order to show that whilst alcohol may be regarded as a poison—and clearly in this particular what is one man's meat is another man's poison—yet like many other poisons it can, under certain circumstances, be of distinct service to mankind. I may say that I believe the consensus of opinion among medical men in the present day is that in many instances the use of alcohol is to some extent beneficial; but there is a strong section of the thinking public which realises that alcohol is a lethal weapon which can work the most fell and deadly effects, and that its general use therefore needs the most careful and earnest control. We know personally from too many instances brought to our notice that alcohol reduces energy, lowers vigour, diminishes initiative, and paralyses enterprise, and therefore many persons abstain from it altogether, and they use untiring efforts to prohibit its use by others, and this through the highest motives, but it must not be forgotten that total prohibition breeds vices in regard to drugs, sedatives, and anodynes. At the moment, the public feeling generally is that under the control of the normal reasoning and moral faculties the moderate demands of working men and women should be satisfied, *i.e.*, within strict limitations, which is interpreted by public opinion to apply to its use at meals only, and only by those who find it helpful in their daily work. It is often felt by those who watch events that the logic of facts has to be carefully weighed against the sentiment of an ideal, and if true progress in regard to temperance is to be encouraged the watchword must be *festina lente*. However excellent the motives, however firm the zeal, and unwavering the devotion, progress cannot be

forced, and it cannot be pushed far in advance of public opinion. I know how in regard to the control of the liquor traffic both feeling and sentiment have run high and with regrettable consequences. It is necessary in regard to this aspect of the question to take cognisance of the state of feeling in all classes of the people, and at the moment there seems to be an irresistible popular feeling against the complete prohibition of alcoholic drink, which that great and useful movement the "War-time Prohibition" or the "Strength of Britain Movement" has already had to encounter; nevertheless it has achieved much useful success in its educational campaign, for it has drawn special attention to a social problem that has been too largely ignored. In discussing this problem various aspects of the drink question come under review, and the hygienic, medical, sociological, and ethical aspects all come up for consideration.

In this paper I propose to deal exclusively with the mental symptoms, *viz.*, those that result from the influence of alcohol upon the nervous system, and in discussing this aspect it may be appropriate to state there is evidence that every psychological state has a corresponding physical state in the brain, for to every psychical process there are special physical and chemical changes in the nervous substance corresponding to it, hence the maxim, "to every psychosis there is an appropriate neurosis," which means that every mental act has its appropriate physical correlation. This parallel relationship has been demonstrated by observation and experiment; it is a joint conclusion of psychology and physiology, and can be definitely supported by clinical and pathological research. Different parts of the brain, as we know, subserve different physiological functions; thus, one part is concerned with vision, one with sensation, and another with bodily movements and speech, yet the whole brain acts together, so that when these various parts are affected by alcohol there occur visual and other sensory illusions upon which are based delusions; in consequence of affections of touch there arise mistaken ideas and complaints about electricity, machinery, hot irons, or the gnawing lacerations of wild animals. It is sensory disturbances in particular which so often originate delusions of persecution and the violent and impulsive retaliations associated with drink. There is no better ascertained fact in medicine than that alcohol has a peculiar affinity for that part of the brain which is connected with the "muscular sense." It destroys the co-ordination of the fine sense which secures the equilibrium of the upright position and that of the limbs, and, as we see in drunkenness, it may bring about motor paralysis. Even before ordinary sensation is affected, the muscular sense may be attacked, so that engineers, delicate instrument makers, mechanics, type-writers, pianists, draughtsmen and those who do fine work need to be especially on

guard if their educated and delicate muscular sense is to be preserved to them. It is our fine perceptions that give us the experience upon which we act, and two classes of perceptions especially, *viz.*, sight and touch, have been very fully studied experimentally, and these are the ones mostly affected by alcohol. In regard to touch, a composite sensation, we know there are four distinct external receiving organs in the skin—firstly, that giving the measure of pure touch ascertained by the pressure on the skin of fine hairs mounted in wooden handles and attached to a balance, then the pain spots indicated by pressing with metallic points; thirdly and fourthly, heat spots and cold, spots indicated by hot or cold blunt rods. In every instance is the response to these varied by alcohol; the first to go is pain, the next heat and cold, and the last pure touch. These are facts that can be demonstrated by experiment, and are the same as occur when the nerve to the skin is divided. In speaking of the mind as related to the brain, we realise that its study implies a close investigation of the various senses which are the avenues leading into the mind. Formerly the study of the mind was limited to the field of introspection only; but of late years investigation has been carried into mental phenomena by means of experiments, and these have enabled us to examine our sense perceptions with much more accuracy and precision, both under normal conditions and under the influence of graduated doses of alcohol. It is usual to speak of the mind as composed of three types of conscious activities, *viz.*, cognition or the state of knowing; of feeling and sensation; and, lastly, of the will; the two latter being now grouped in the subdivision of interest, but the will is the highest and essentially the most human characteristic of the mind. Of the powers of the mind memory is one of the most fundamental as well as the most important, for without memory we should be unable to co-ordinate the different states of consciousness and we should also lose our personality, results which we see occurring after the excessive use of alcohol. The facts which come into the mind to be grouped together by association—like to like and unlike contrasted with unlike—remain endorsed upon it through memory, and the main objects of education are to form time-saving and correct associations. Discipline is a matter of association—a body of well-trained troops only needs to hear the first of a series of orders to carry out the whole train, as one is linked to the next by association. The power of constructing and carrying out trains of thought by association is described as the power of apperception, which is the focussing power of the mind, and it is this which is the first to be impaired by alcohol; it may be temporarily suspended or it may be permanently destroyed.

There has been much confusion as to the use of terms in dealing with the effects of alcohol, and the term “alcoholism” has received

widely different meanings. Mr. Leif Jones (President of the United Kingdom Alliance) in an address to the International Congress at the Hague, in 1911, used it as signifying the total consumption of alcohol by a people; whereas others use it to imply the measure of mortality from strong drink indicated by mental and physical symptoms leading to fatal results and recorded in the Registrar-General's statistics. The most common effect of the excessive use of alcohol is drunkenness, and the symptoms of this are too well-known to need description. But there are three very different types of drunkenness; firstly, there is the periodic drinker or the dipsomaniac who imbibes freely and deeply but at intervals only, and during these intervals he may abstain completely; secondly, there is the person who literally soaks in alcohol, who is hardly ever sober, and is the person described as the "habitual drunkard," who swells the police-court lists until, eventually, owing to the progressive lesions and their lasting effects, his death is recorded in the Registrar-General's statistics as a case of alcoholism; and, thirdly, there is the ordinary drunkard who drinks from pure conviviality and only needs the congenial "pals" to spend all or most of his money whenever he gets it and thus to lower his productive efficiency. He is the typical Saturday night and Sunday drinker, and he almost invariably gets into the hands of the police and figures in their statistics. It is this person who is the average worker upon whom the State depends. Broadly speaking, neither alcoholism nor drunkenness in its three forms of these terms signifies the amount of alcohol consumed, although the statistics of drunkenness may be the most reliable index. As we know there may be a considerable consumption of alcohol with a comparative absence of drunkenness, and for this reason it would be more convenient to regard alcoholism as a social disease of which drunkenness—whether of the periodic, the chronic, or the occasional kind—is one of its forms. If drunkenness may be taken as an index of the amount of drink consumed, the number of deaths from cirrhosis, delirium tremens, dropsy, or Bright's disease may be taken as the index of the incidence of the social disease. It has been asserted by some critics that a diminution in the numbers of cases of drunkenness may imply even more rather than less drinking, because those persons who, under the present restrictions, have a difficulty in obtaining alcohol, may drink privately and secretly in their own homes; but this is denied by all social workers, and is contrary to the observed experience and the recorded inferences of all those who know the homes of the people. Whatever importance or value we give to these terms, it must be the question of immunity or the insusceptibility or the vulnerability of the different organs of the body which is the determining factor as to whether a case comes under the definition

of occasional drunkenness or habitual drunkenness, or of alcoholism. We here employ the term alcoholism to signify all the pathological changes which result from drink and to include all the varying symptoms whether mental or physical, and whether these occur in hospitals, asylums, police courts or the private home of the individual. Alcoholism must therefore be the total effects of the use of alcohol, of which drunkenness is probably the most convenient if superficial indication, and it is drunkenness, whether its effects be sensory, motor, mental, or moral, which is the most common indication of excess.

Of the various forms of mental impairment caused by alcohol the most dangerous because the most violent and impulsive is *delirium tremens*, which occurs in one-fifth of all cases of alcoholism, and in consequence of continuous alcoholic intoxication in those persons who are liable to mental and sensory hyperæsthesia, and is associated with extreme agitation, tremors, night hallucinations, and insomnia. The symptoms are too familiar to be further detailed, but probably thousands of these cases occur annually. Another form of mental affection not uncommon among the civil population, although fortunately rare among the military, is that of multiple neuritis associated with mental symptoms, and commonly called Korsakow's psychosis. It is characterised by a loss of memory of a peculiar kind. There are gaps in the recollection of past events, which the person fills up with events that have never happened; these being suggested by some trifling incident in the environment at the moment, and for this reason he is said to lie shamefacedly, but this is only because the memory is a blank and he is unable to retain impressions of his own statements, causing a peculiar forgetfulness as to time and place—a loss of orientation. There is an impairment of that special retentive quality of the nerve-cells by which the healthy brain is able to register the images of past sensations, and by means of which thoughts may be expressed in a clear, regular, and logical order. This form of loss of memory is described as *paramnesia*, and is most indicative of alcoholic indulgence. A third form of mental affection through drink is one closely related to epilepsy, and this is greatly favoured by a head injury or some predisposition to mental disease. It is accompanied with sudden frenzy and fury, and is not infrequently associated with unconsciousness, and possibly also epileptic convulsions, but if these are absent there is a marked "automatism" and a complete forgetfulness of what has previously occurred. In these attacks the person may commit acts of serious violence, even suicide or homicide, and there is an imagined hostility from his environment which calls for resistance or retaliation; but this condition ceases entirely with abstention from alcohol, although an immediate relapse may occur when excessive drinking is again resumed, and it may be noted that

this excess may be a very small amount of alcohol, as in these persons there is a marked susceptibility to its effects. I have met these cases repeatedly in civil practice, and also in the case of young officers who have suffered from head injuries. A fourth form of mental affection is an unrestrained excitement caused by the presence of vivid hallucinations, and again it is the susceptible brain that suffers rather than the normal person, for very little alcohol may produce these hallucinations which are vivid and terrifying, and which may induce a chronic delusional state from which there is no recovery. This condition much resembles that of paranoia with delusions of suspicion and persecution. It is essentially a chronic form. Lastly, there is the state of terminal dementia, in which the mind gradually fails until the mental wreckage is complete. Whether a case evolves from slight mental confusion through the different mental states into fatuity and dementia as the result of alcohol, must depend more upon what has already been referred to as the peculiar susceptibility of each individual rather than upon the quantity or the quality of the alcohol imbibed. It is certain that all young persons in health are better and fitter without it, as also all older persons with a neurotic family history.

It may be correctly stated that there is much in common between all the forms of mental disorder associated with alcohol. There is an undue suspicion in all against their environment, and if delusions are present they tend to be of a persecutory nature; even if they partake of a grandiose character, there is frequently the suspicion that the victims have been robbed of their rank, position, and wealth. Their hallucinations mostly relate to sight and touch; imaginary objects are seen moving, crawling, or creeping over them, and they complain of being burnt, electrified or tortured; the memory is invariably affected for recent events, although more correct for remote events, and their actions are predominantly impulsive, purposeless, and unreflective; they make imaginary journeys and relate what seem to be plausible assaults committed upon them which they resent, and which they intend to repay their fancied enemies with interest; lastly, there is the invariable moral and intellectual deterioration shown by the offences committed against public decency and against the amenities and conventions formerly so correctly observed, so that the alcoholic ends by becoming an object of reproach to all his former friends and associates.

I have already referred to the impulsive and dangerous acts committed by persons under the influence of alcohol. In some instances these resemble the uncontrollable fury of epileptic mania, which, in my opinion, is the most furious and savage violence that can be seen in any individual, for it seems like a tornado of wild, impetuous, destructive

rage. Under the influence of alcohol the most rancorous and loathsome cruelties have been perpetrated upon innocent victims ; the most bitter hatred has been shown ; prudence and moderation and altruism have disappeared under its influence. We have it officially recorded that the most brutal excesses followed in the track of the drunken German troops in Belgium and in Northern France. After they had emptied the cellars of the French châteaux they ransacked the furniture and priceless contents, and then lay upon the floors in stuporous semi-consciousness ; whilst at Rheims they behaved with ferocious cruelty, and in the dug-outs of the Somme battle our men found German officers hopelessly drunk and filthy. The account of eight drunken German soldiers returning from Malines is authoritatively quoted, and relates that when a little child ran out into the street as these drunken Huns passed by she was bayoneted by one of their number, slung up, and thus carried away whilst his comrades sang. The organised cruelties and atrocious outrages carried out by gangs of drunken German soldiers, the assaults committed upon helpless women and children are an eternal disgrace to the military forces of Germany and to those in authority over them. The German medals struck to commemorate the foul murder of the helpless passengers on board the "Lusitania" will for ever remain a shame and a reproach to German honour, and drink has frequently been the root of like actions. I have personally witnessed the mental breakdown of innocent women from Flanders who were driven into madness by the coarse savagery of German officers and men, whose animal nature was set loose, and whose instincts and brutal desires through drink were no longer inhibited by the control of the higher faculties. The horrors of German atrocities have already been fully and accurately described with great moderation in the Bryce Commission's Report and other records. The German troops, as well as the higher commands, have shown a most mad brutality, as well as a sordid love of malicious destruction. They have delighted in spoiling anything beautiful and irreplaceable.

I have already referred to the use of alcoholic liquor as an ordinary article of diet, and I consider it a dangerous temptation to the younger officers. The following extract from the letter of a young officer supports my view. It is written from a divisional headquarters, "somewhere in France," and it runs as follows : "It is very hard for the teetotaller out here, as it is not safe to drink the water unless it has chloride of lime in it, and this makes it taste simply foul. I am at present drinking very light French beer, which is much better for me than whisky. I am afraid the present way of keeping the mess bill will not work, as they order cases of whisky and port, and the cost is shared by all members whether they drink it or not." This is a matter that needs the urgent attention of the authorities, for there is no reason to penalise

the abstainer to save the pockets of those who are not. Abstention, like the custom of drinking, is a habit, and it is imperative that young men who are ready to make the extreme sacrifice for their country should not be sacrificed on the road which is not the road to victory, but the short cut to all the other vices. Quite different, in my opinion, is the use of the "rum ration" in the trenches. I have spoken to Army chaplains about this matter, some of whom are life abstainers and have served in the front trenches ; these men speak of the value of medicinal doses of alcohol against cold and wet and exposure, but one and all condemn the *estaminets*, where the men are served with mixed poisons having special intoxications of their own, yet all are labelled with the indefinite name alcohol. The chaplains are naturally in favour of the dry canteens, which many of them manage, but most of them are in favour of permitting light wines, beer, and spirits during meals, if only the *estaminets* could be considered by the commanding officers to be "out of bounds," and some of the chaplains are ready to buy and sell drink at the canteens for the sake of the men, if their use is limited to meal-times and the *estaminets* are forbidden. That this matter is a most difficult one will at once be acknowledged, and that there are different views in regard to it is also natural. The two letters which appeared in *The Times* on December 17th last show the different mental states from which the critics view the present condition of things in regard to alcohol. One of the letters is from Dr. Grenfell, C.M.G., of Labrador, who is well known to members of this Society. He states that the American soldiers show an absolute freedom from drunkenness and a small amount of immorality, but when they get to England and France "they will get all the alcohol they want, and therefore also the danger that comes with it." In the same number of *The Times*, Mr. W. T. Ellis writes that he has just arrived in London from Russia, and his own impression, after four days of observation, was in striking contrast to the suggestion of Dr. Grenfell—a strong prohibitionist. Mr. Ellis writes : "I have yet to see a drunken soldier here, or one behaving in any way that reflects discredit upon the Allied flags." To the man in the street the real truth must lie between these two extremes, and it is interesting to reflect upon the mental state of the critics themselves. I may add that during the whole of Christmas week, whilst going about freely in London, I did not meet a single drunken person. As to the effects of alcohol upon the mind we may repeat, firstly, that there are the various degrees of mental confusion and motor inco-ordination described as drunkenness, which are mainly of three types, *vis.*, the periodic kind, shown in the dipsomaniac, the more or less continuous form seen in the habitual drunkard, and the occasional drunkard ; secondly, the state described as *delirium tremens* ; thirdly, the combined condition of neuritis and psychosis ; fourthly, the convulsive and auto-

matic state; fifthly, that of chronic hallucinations and delusions, and lastly, the terminal state of fatuity and dementia. It may be stated, broadly, that all forms of mental affections brought on by alcohol or associated with it may be subdivided or referred to one or other of these groups. I am leaving out of this paper the fatal malady, general paralysis of the insane, which, in my opinion, has a close, indirect relation to alcohol. It is a mental and physical disease which affects young men in the Imperial services, particularly the Army and Navy, and out of the whole population possibly 1,000 men—these probably of the best and most adventurous type—are destroyed annually. Side by side with this is the mental and physical destruction of about 500 women from the same disease.

Let me now take the second section of my theme and briefly refer to the mental states shown by those responsible for the sale and control of alcoholic drink, which have ranged between a mild endurance and extreme intolerance, and as we know the question of drink is by no means a new one in this country; indeed, drunkenness as the consequence of drinking is the oldest of the vices and has been known in every country from very ancient times, whereas alcoholism or the pathological conditions produced by alcohol is a development of civilisation.

The statutory licensing of ale-houses began as far back as 1495, but it was not until 1606 that—to use the words of the Act—"the loathsome and odious sin of drunkenness" was made a statutory offence punishable by fine or confinement in the stocks. Throughout the Middle Ages the provincial and the Diocesan Ecclesiastical Courts exercised an active and strict jurisdiction in regard to moral correction, and sternly punished the "infamous and offensive" sin of drunkenness. Apart from special local legislation the early statutes of 1606 continued until 1872 when the Licensing Act of that year made it an offence punishable on summons by fine to be found drunk in any public place or on any licensed premises. There was more activity in regard to drink legislation during the seventies than in any consecutive ten years before or after, and not until the Licensing Act, which came into force on January 1st, 1903—as a result of a special Royal Commission described as the Peel Commission—was there any concerted effort made to diminish the number of public-houses proportionately to the population. This Act made it a penal offence for a person to be "drunk and incapable" on any licensed premises or in any public place, and a drunken person if in charge of a child under seven years of age became liable to imprisonment with hard labour for the period of one month, and information in respect of this offence, and even the arrest itself may be made by any person. A special feature of this Act was the "Black List," a system by which

the offender, if convicted for drunkenness four times in the same year, may be either fined or sent compulsorily into a reformatory for any period up to three years. The police provide photographs of the offender (with details of previous convictions) to all licensed premises and to all secretaries of clubs within the district of the Court, and if drink is afterwards supplied heavy fines may be imposed upon those who sell. This Act aimed at protecting the home, and it *tended* to make it impossible for drunkenness to become the curse and ruin of an innocent family, and in addition the Act gives power to control the structural arrangements of all public-houses, so that no alteration is possible without the consent of the licensing justices. The Act was an effort to repress the abuse of alcohol rather than to restrict the sober person; yet, since the passing of the Act and for several years up to 1914, there has been a gradual rise in convictions for drunkenness of both males and females; the "Black List" also, in spite of good intentions, has become a dead letter, so that although there has been a steady diminution and reduction of public-houses—partly by order of the licensing justices and partly also by arrangement with the brewers—it was not an infrequent occurrence for County Councils and other authorities as well as for local residents to petition the licensing justices to diminish the number of public-houses on the ground that facilities to obtain drink not only increased the temptation for people to drink but also encouraged the desire; the petitioners feeling deeply that the class of the very poor should not be swelled with continual recruits through drunkards and their families being brought into them from all the other classes. Indeed, so serious had matters become six months after the war through drunkenness, impairment of health, loss of workmen's time and general bad temper, where a large population had congregated for munitions and other Government work, that the present Prime Minister described the drink as a worse enemy than the submarine, and in June, 1915, the Liquor Traffic Control Board (with Lord D'Abernon as Chairman, and Mr. J. C. G. Sykes as Secretary), was instituted by the Parliament of the people under the Defence of the Realm Act, and it must not be forgotten that the enactments and regulations of this Board have the force of an Act of Parliament. This Board set to work at once with a definite policy which was to stop continuous drinking and to modify drinking at frequent intervals, especially during working hours, as these indulgences were believed to be the root of most of the physical and mental troubles and disabilities among workers, and the Board hoped to discourage all drinking except at meals. The work carried out by the Board in such areas as Carlisle and Enfield reads like a romance, but it would have been probably impossible if Parliament had gone to the country asking for the powers they have exercised.

In Carlisle and Annan the Board have closed many of the public-houses and some of the breweries, and have themselves taken over the enterprises carried on formerly by these as well as by the wine merchants. They have placed disinterested managers in charge of their houses, and managers were not to profit by the sale of drink but only by the sale of food; the hours of opening were restricted to those of meal time, the sale of spirits was to be discouraged and none was to be issued to those under eighteen years of age, and—a very important feature—all drinks were permitted to be diluted. They have arranged for entertainment and recreation to be provided for persons frequenting their premises. They also have power to provide postal and banking facilities for their customers. Moreover, they have arranged for their own inspectors to visit and examine all premises and clubs within their controlled areas in order to insist that the regulations are carried out, and, lastly, they have established Sunday closing. It is not fully appreciated by the public to what extent the regulations of the Board have succeeded, but it is only short of marvellous to realise that these rules control thirty-eight millions of the population of this country, and it may be surprising also to know that the Board have not acted in a single instance without an application to do so being presented by the local naval, military, transport or munition authority. May we ask what results have followed the action of the Board? Throughout London and in forty towns with over 100,000 inhabitants, 159,000 convictions for drunkenness in both sexes occurred before the war, whereas in 1916 these had diminished to 77,000, or less than one-half. In London alone last year nearly 20,000 arrests were made by the police for drunkenness, with “incapability” and disorderliness as qualifications, and this number is less than half the number during the first year of the war. In all the areas where the Board have exercised their powers, the streets have become more decorous, the station platforms more orderly, the people more tranquil and crowds less excitable; workers have been healthier and their minds less irritable; there has been more contentment among the mass of the people, they are more reasonable and have got through more work. In addition, there has been a reduction by one-half in the number of cases of delirium tremens, especially in places where men collected in large numbers, and many of them drifted through drink into the Poor Law Infirmaries. The results in all areas have been perfectly astonishing although these are only a few of the attainments of the Board, and these results have been testified to by chief constables, medical officers of health, district workers, nurses, and even by members of the licensing trade itself. The police-court statistics have supported the statement made that drunkenness among men and women has diminished by one-half. Yet what do we find among some of the critics, *viz.*, those who are

described as extreme temperance advocates; persons whose whole-hearted efforts are said to be in the public interest, yet, who in regard to the control of the liquor traffic, are "neck or nothing." They offer to the policy of the Board an uncompromising opposition, and in place of the scheme of purchase and control so successfully carried out by it, they advocate a scheme of total prohibition. They offer a flat contradiction to the Board's statistics, and to support their opposition they urge that in spite of the restrictions generally imposed by the Board, the fact that there has been a continuous increase since the war of expenditure on intoxicants—which was 12 *per cent.* higher in 1916 than in 1915, and 24 *per cent.* higher than in 1914—and that the amount of money spent upon alcoholic liquor in 1916 was higher than in any previously recorded year, and the highest yet recorded; but this can be accounted for by the high price paid for drink, which means that although the nation spent more, it drank less, and the revenue received less money. These opponents also assert that if there has been a diminution of drunkenness, which is not admitted by them, there has been more private drinking, which is denied by all those most competent to judge; or they state that the police have been more lax in their supervision of drunkenness since the war, which is an aspersion upon the police. What are we to think of the mental state of persons who can direct such a virulent and vehement crusade against the work of the Board of Liquor Control? The following is the criticism made in the leading article of *The Times* of December 26th (1917): "The diminution of intemperance among women will not be welcomed by those intemperate advocates of temperance who regard the total prohibition of the liquor traffic as an absolute good in itself. Some people seem actually to prefer an increase to a diminution of drunkenness, because it is a lever for promoting their cause, and they will criticise and deny the evidence quoted in the report of the Board, *viz.*, the fact that there has been a diminution of drunkenness as shown by the average weekly number of convictions—which has fallen from 700 in 1914 to 239 in 1917." These specious critics assert that police statistics are notoriously unreliable and that the fall in these have been more than overbalanced by an increase in home drunkenness, that public excess has been replaced by "secret drinking," which, of course, is not the case. The local Carlisle journal's reply to this criticism reads as follows: "The improvement (in Carlisle) is as noticeable in the orderliness of the streets as in the official figures of decrease in convictions for drunkenness, and to the citizens this return to good order must be highly gratifying; and not only are the numbers decreasing in comparison with previous years, but the improvement still continues and is very pronounced." Nor has this hostility been limited to the work of the Board; one member of the

Board himself has been the recipient of the most unmerited abuse and contempt on the part of this extreme wing of the temperance party. Nor was it long before their example was taken up by other discontents. The Labour Council in Carlisle saw in Sunday closing an interference with the workmen's comfort and freedom, and they naturally demanded a reconsideration of this matter by the Central Board, with a request to return to the former hours of opening. The whole matter was referred to the local Advisory Board which apparently took the side of the Labour Council, but the Central Board very wisely decided there was not sufficient reason to go back upon their decision, suggesting that whatever determination was arrived at would always give rise to some conflict of opinion. The matter is possibly not yet closed because the Labour Council have decided to make further representations, and it is earnestly hoped that the trouble started by the extreme wing of the temperance party will not be the means of stirring up labour troubles in Carlisle and elsewhere. In addition to the complaints of the Labour Council there has arisen an acute opposition from the Midlands, and again on behalf of the prohibitionists, but apparently originating in an insignificant quarter.

It is quite well known that before the Central Board came into being the policy of regulation and restriction under private ownership had already received a fair trial throughout the country, but it is also equally well known that it had reached its effective limits and something practical and immediate had to be done. No one denies that to the idealist temperance reformer—may we say not only to the mind of the total abstainer—prohibition as an ideal has undoubted public advantages over any system of State purchase, precisely as this has merits that are immeasurably superior to the scheme of the improved public-house, as it is called, advocated by the self-denominated True Temperance Association; but the work of the Central Liquor Traffic Control Board has by an overwhelming consensus of public opinion advanced the cause of temperance; yet there has been this incomprehensible attitude against its members and against its work, and more incomprehensible still this attitude has been excited and fomented by those who should have been its best friends. What is the psychological explanation of such opposition? I am of opinion that this intolerant exhibition of superiority deliberately shown by this extreme section is based upon a form of egoism; it is a consequence of a psychological self-gratulation and self-esteem which borders upon an obsession, and is regarded by some authorities as pathological! Most of us will acknowledge that all excellences require some comparison to demonstrate their advantages, but when specious reasons are advanced to support them and these are mingled with personal attacks, then such criticism passes beyond the limits of legitimate argument.

A person who argues from selfish ends and from a feeling of personal superiority over others is very apt to dry up the wells of truth in order to justify his standpoint. Nor is such a person contented to stand alone, but, as we see in this instance, he courts the sympathy of others—whenever they may be—and so long as his own views are furthered he will even sacrifice his own sense of honour in his effort to bring the opinion of society against his opponent and to throw discredit upon his views. No form of hostile criticism is so unendurable to a sensitive high-spirited nature as the disapprobation of his fellow-men and fellow-workers, and it is a favourite device with the advocate of a weak cause that he should not only excite public opinion against his opponent, but also that he should heap upon him as much private contempt as possible, with the sole object of forcing him through this vituperation and scorn to modify his attitude, and this irrespective of the public good. We have used strong words in criticising this conduct of the extremists, and we know that this virulent and vehement opposition is not supported by public opinion. Let us be thankful that in the best interests of this country we have had a strong and energetic committee that has created a great change in the habits of the people as a war-time measure. It behoves us to think of what is to happen after the war is over. The period of demobilisation is going to be a serious trial, especially to us who have to bring our brave men home from far distant seats of war, and all our men will be returning to find things very different from what they were. As Major Eccles said, “scenes of drunkenness will be a dishonour to a nation that has been fighting for right and righteousness” It is the duty of this Society to urge that the best conditions for employment shall be provided for our damaged men. There will be many difficulties after the war; there may be destitution; there certainly will be shortage of food and money. The question of the control of drink must be one of the first considerations, and are we giving it the amount of thought it needs? Our present mental attitude is too apathetic, and if we do not awaken now we shall be confronted with far greater menaces than we have hitherto faced. At any rate, we can rely upon the standing example of what has been achieved by this Board even during the stress of war.

(¹) A paper read at the Society for the Study of Inebriety, January 8th, 1918.

War Psychoses: An Analysis of 202 Cases of Mental Disorder Occurring in Home Troops.⁽¹⁾ By Temp. Capt. D. K. HENDERSON, M.D., R.A.M.C., Royal Victoria Hospital, Netley.

IN June, 1916, a portion of the Lord Derby War Hospital was set aside for the care and treatment of cases of mental disorder occurring in non-commissioned officers and men of the British Expeditionary Forces. In addition, it was found that at the home training camps, and in soldiers doing garrison duty in India, Gibraltar, Sierra Leone, and so on, numerous cases of mental disorder were from time to time arising. As it was obviously impossible for general hospitals adequately to care for such cases, the Lord Derby War Hospital, pending their final disposal, was called upon to receive a certain number of them. Other arrangements have now been made for more expeditiously dealing with these cases, and in consequence none such are now received in this hospital.

These Home Troop cases have, however, provided a valuable amount of material for study, and have particularly brought forward the important question: Who should be recruited? I shall not delay at this point to discuss this question, but it will be taken up and dealt with in detail in discussing the different types of mental disorder which have arisen.

Seeing that these men had broken down during their military training on home duty, it was conceived likely that they would never make efficient soldiers, and consequently, irrespective of the type of mental disturbance, the plan was adopted of discharging these men as quickly as possible from the Army. With the great majority of the cases there can be no doubt that, from the point of view of the Army, this was the soundest policy to adopt; but, seeing that one had to deal with cases in such an arbitrary way, one could not help but feel that greater care should have been exercised in their enlistment. Or if, on the other hand, it was felt to be an absolute necessity to enlist such men, then, likewise, greater care might have been exercised in apportioning to them the work for which they were best suited. It stands to reason that when any large group of individuals is called upon to meet a certain situation, no matter how simple it is, there will always be some who either because of certain faults in the balance and adaptability of their make-up, or because they are congenitally defective, or because of already definitely developed forms of mental disorder, *e.g.*, general paralysis, chronic alcoholism, etc., will be unable adequately to meet the situation. The consequence is that it would seem to be not quite right, from the individualistic point of view, that a number of those who break down should be summarily discharged or sent to asylums.

LXIV.

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The great majority of the men comprising this group were men who had been called up under Lord Derby's more or less compulsory scheme, and the balance had been made up of those others who on account of their age, or of some minor disability, were considered to be unfit for active service abroad.

Apart from these preliminary and more or less general considerations, it may be stated at once that there did not seem to be any one special type of mental disturbance to which these cases were particularly prone, and here we had a heterogeneous group of individuals all exposed practically to the same situation, but each of whom tended to react to that situation according to his inherent or predisposed constitution. The cases were not clear-cut, but frequently showed a mixing of symptoms, and formed a composite picture. Before going on to discuss the individual groups it may be admitted quite frankly that in several of these cases the formal diagnosis is quite open to question, but owing to the vast number of cases passing through one's hands, and owing to the short time the majority of them were under observation, this could hardly have been otherwise. After all, the labelling is not the important thing ; it is much more interesting and stimulating to look upon these cases as reactions to situations which could not be adequately met. Roughly, however, these 202 cases have been differentiated as follows :

Mental deficiency	61	Paranoid states	8
Dementia præcox	43	Toxic-exhaustive insanity	3
Manic-depressive	24	Epilepsy with insanity	3
General paralysis	19	Organic brain disease	2
Alcoholic insanity	17		—
Traumatic insanity	12		202
Psychoneuroses	10		

Mental Deficiency.

Sixty-one cases, or roughly 30 *per cent.* of the 202 cases, have been included in this group. In considering these cases, the most striking feature which has come to one's notice has been the fact that the acute symptoms which necessitated these patients being sent to hospital were of an *exceedingly transitory nature*. That statement is best brought home by saying that 45 of these 61 cases showed such a betterment in their condition that in the course of a few weeks they were able to be discharged to their homes ; the remaining 16 were certified as insane, and committed to mental hospitals. There would seem to be little doubt, however, that, considering that the average period which these patients spent in this hospital was approximately six weeks, a considerable number more would have cleared up provided it had been possible to treat them for a longer period of time.

Alienists have not infrequently been reproached with looking upon everyone as mad, and one becomes constantly and forcibly reminded of this when it comes to saying whether or not a person is mentally deficient. There are, of course, many cases which obviously to any one are not "all there," but there are very many other cases which it is exceedingly hard to fairly size up. One would not complain nor criticise provided one felt that just ordinary care had been exercised in recruiting cases of mental deficiency for the Army, but where the defect stares one so openly in the face, as in the great majority of the cases included in the group which we have examined, then it would seem that the time had come for reform to take place. In mental deficiency all sorts of superimposed clinical forms may show themselves, but for the purpose of this paper five main sub-groups have been differentiated as follows:

(1) Mentally deficient, but without definite psychotic symptoms	34
(2) Dementia præcox-like states	8
(3) Manic-depressive-like states	12
(4) Impulsive, assaultive, suicidal states	4
(5) Acute hallucinatory states	3
	—
	61

Mentally Deficient, but without Definite Psychotic Symptoms.

All the 34 cases belonging to this group were so grossly abnormal that it was undoubtedly a waste of both time and money ever to have enlisted them. The great majority of them were simply feeble-minded boys who were quite unable to adapt themselves to the stress of military training, were unable to do their drill, understand commands, etc., and in the course of their first few weeks' training were sent to hospital, and finally discharged. A brief report of a few of the most striking cases is the best comment one could give:

(1) No. 12536, gunner, attached to R.G.A. (Signal School), æt. 30, broke down within the first month of his training. He had been admitted to the Rest Camp at Southampton "because he said he was forty-three years old." He stated that he could not get the noise of the buzzer out of his head, and the doctor who examined him diagnosed the case as one of "exhaustion psychosis," and recommended a long rest. On admission to this hospital he was found to be dull and stupid looking, had a vacant expression, and all the appearance of a mental defective. He stated that they had tried to teach him signalling, but that he had utterly failed to comprehend it, and now wished to forget all about it. When he left school, at the age of fourteen years, he had only reached Standard III; he was unable to do the simplest calculations, could not tell who was King, and had practically no realisation of current topics.

In civil life this man had been a skilled machinist, doing Government work ! How much better it would have been if he had been left at the work which he was suited for, or else, if he had to be enlisted, surely he might have been employed otherwise than in trying to learn signalling. He was discharged from the Army and sent back to his former occupation.

(2) No. 26475, private, æt. 27, had been seven months in the Army. When admitted to this hospital he was dull and demented looking, could not tell his regimental number, was somewhat suspicious, and stated in an irrelevant way that he would refuse to sign any papers. He was unable to tell when he had enlisted, or to give any satisfactory account of himself. He did not know the day, but gave the month, year, and place correctly. At school he had reached Standard III, could only read and write with great difficulty, said that King Edward VII was on the throne, and was quite unable to do the simplest calculations. Physically, he had a low, broad palate, irregular, asymmetrical teeth, microcephaly, and the whole general appearance of a defective. He was committed to an asylum.

(3) No. 19607, private, æt. 35, had been in the Army for about three months. He was received from Litchfield Military Hospital, where he was described as ill-nourished, of stupid appearance, gave vague answers to questions, sometimes refused to answer at all, and gazed at the ceiling. On admission he was found to be a poorly-nourished, defective-looking man who walked in a slovenly way, dragging his feet. He was very dull and stupid, complained of headache, and could not tell how long he had been in the Army. Apart from his general defectiveness he did not present any special symptoms. He was committed to an asylum.

(4) No. 37717, private, æt. 40, had been in the Army for four and a half months. "This man had been found to be quite unfit for his duties, and on admission was unable to give any account of himself. He was obviously a weak-minded individual. The following are samples of his mental capacity : $3 \times 9 = "18"$; $6 \times 4 = "45"$; $2/6$ in $15/- = "17."$ Who is King ? "The Prince of Wales is King now." He was committed to an asylum.

(5) No. 2633, driver, æt. 29, had been in the Army for fifteen months. He had always been nervous and complaining, and in 1914 had been previously discharged from the Army "as unlikely to make an efficient soldier." At Connaught Hospital, Aldershot, he was dull and slow, his mind appeared to be imperfectly developed, and childish. On admission he was found to be simple and weak-minded, said the thought of having to ride a horse made him feel badly, and that he had become downhearted because he recognised he was not fit for his work. He was returned home to the care of his friends.

(6) No. 5669, private, æt. 19, had been in the Army for one month, and in every way had been found to be utterly unfit. He could not read or write, could not tell when or where he had enlisted, and his usual reply to any question was : "Father knows." He had never passed out of Standard I at school, and was really an imbecile. He was sent home to the care of his friends.

(7) No. 36957, private, æt. 26, had been in the Army for five months. He stated that shortly after leaving school at the age of ten years he had

been knocked unconscious by a blow on the head, and following this he had always suffered from headache and "bad nerves." On admission and during his stay he was quiet and orderly, but mentally he was very defective, and made many irrelevant remarks. He was unable to do the simplest calculations, and when asked who was King, replied: "He is our King, I hope, sir." Physically, he had a marked cyanosis of the extremities.

(8) No. 30390, private, æt. 20, had been in the Army for six months. On admission here he was dull and stupid, said that his head seemed to be on his mind, that it felt mixed up and numbed, and that it had bothered him ever since a severe cycle accident which he received about six months after leaving school. At times he said that his head would get so mixed that he did not seem to know what he was doing, and at Chatham he had gone to see a doctor because on a march he would tend to go giddy. He had reached Standard III at school, and had always done very menial work, never at any time earning more than £1 per week.

These last two cases show very well the necessity for making careful inquiry in regard to head injuries, and show the tendency there is for head symptoms to reassert themselves as soon as a patient is subjected to a strain that is too great for him to meet.

(2) *Dementia Præcox-like States.*

Among cases of mental deficiency it has been a well-recognised and long-accepted fact that frequently one meets with mute, resistive states, or rather vague persecutory states which in a superficial symptomatological way closely resemble the dementia præcox type of reaction. On a closer analysis of such cases it is readily enough seen that the condition has been engrafted on a mental defective make-up; furthermore, that it is exceedingly transitory in duration, and frequently clears up on a change of environment or on the lifting of the exciting strain.

(1) No. 24029, Private S. C—, æt. 37, was admitted to D Block, Netley, from Southampton Docks, where he had been employed on labouring work. He is described as having been confused, and admitted having attempted to take his life, because he said that people had been taking him for a spy, and had been watching and following him. He had definite delusions of persecution and had assaulted a sergeant. On admission here he presented the same picture of suspicion, and continued to express delusions of persecution, but these rapidly passed away. He was of a very low type, was defective both intellectually and morally, and at various times in his career had been convicted of issuing base coin, theft, and burglary.

Another patient presented a dull, mute, catatonic, resistive state, but his symptoms rapidly cleared up, and he was able to be discharged to his friends.

The other cases corresponded to either one or other of the above types, but they presented no special problems, and will not be further referred to.

(3) *Manic-depressive-like States.*

Twelve cases belong to this group, nine of whom had spells of depression and the remaining three showed periods of excitement. As has already been noted in the dementia præcox states occurring in mental defectives, so also may it again be said here that the depressions and excitements showing in this group of cases are on a much more superficial plane than the true manic-depressive attacks and run a much more rapid course. The matter is really best expressed by saying that the depression or excitement is simply a mode of reaction towards a situation which the patient cannot meet, and usually rapidly subsides when the situation difficulty is removed. Symptomatically also the depression is not of the slowness, sadness variety, but a rather more dramatic state with outbursts of crying, restlessness, and agitation; similarly, the excitement is not so much in the nature of a jolly, elated, flighty, distractible state, but rather an excitement characterised by obscenity, irritability, and violent, assaultive outbursts. These points are well illustrated by the following cases.

(1) No. 27878, Private R. F—, æt. 39, had been four months in the Army. At the Military Hospital, Lincoln, he was described as being of low intellect, and as thinking that he was going to be killed. On admission he was dull and miserable looking, and could not give his regimental number. He complained of his head getting into silly "sort of ways," said that he had been worrying about his wife and boy, and felt that he ought to be with them. He stated also that in civil life he had had nervous depressed attacks, and came from a poor stock. He spoke in a hesitating way, stuttered, said he had felt frightened, and thought he was going to be shot, and had been quite unable to adapt himself to the stress of military training. He was poorly endowed intellectually, and made mistakes in doing simple calculations. His father had been in an asylum, and his brother had committed suicide.

(2) No. 29198 Private T. S—, æt. 38, had been in the Army for eight months. He was admitted to this hospital from Fort Pitt, Chatham, where he had been diagnosed as a case of melancholia. On admission he was in a tearful, depressed state, and when brought into the examination room he inquired, in a frightened way: "What have I done sir, what have I done?" How are you? "I'm all right (sobs); I have always been like this—I can't do anything with myself." The next minute he burst into tears in a pitiful way, and said he wished that he was underneath the earth. He could not tell his regimental number, nor when he had joined the Army, and did not seem to know what his "unit" meant. In civil life he had never been capable of doing any work, and his father had to take him to the recruiting office. He could not tell the day, month, or year, and at school had never been able to learn anything. He had the usual physical and mental characteristics of an imbecile. His depression rapidly subsided, and he was able to be taken home by his friends.

(3) No. 6781, Rifleman W. J—, had been in the Army for three months. He was received from Tidworth with the diagnosis of imbecility; he laughed and grinned foolishly, was dirty in his habits, noisy, and liable to fits of excitement. He had a simple fracture of his left leg, which was in a plaster-of-Paris cast. On admission he was in a noisy, destructive state, was dirty in his habits, and subject to outbursts of violent excitement. He used the most filthy language imaginable, and was constantly masturbating. His excitement rapidly simmered down, and he was discharged to the care of his friends.

(4) Private J. S—, æt. 36, had been three-and-a-half months in the Army. In civil life he had been a fitter in the engineering trade, but had been convicted about fifteen times for theft, burglary, assaults, drunkenness, etc. Since joining the Army, he had spent the greater part of his time in the guard-room, and several times had deserted. On admission he was happy and elated, had no sense of his position, said that he would like to go to France, but, first of all, would like to have leave so that he might marry his sweetheart. He was sent to an asylum.

(4) *Impulsive, Assaultive, Suicidal States.*

The only case in this group which need be specially referred to is that of a man who frankly enough admitted that he had threatened to commit suicide as a means of leaving the Army.

No. 60544, Private G. H—, æt. 20, had been in the Army for two months. He gave a history of "fits" ever since the age of four years, and stated that while he was in barracks he had had several "fits"; he bit his tongue, had incontinence of urine, and his fits occurred at night as well as during the day. At school he had only reached Standard III, and since leaving he had never earned more than 3s. 6d. per week and food. A week or two after joining the Army he was sent to hospital on account of his fits, and of trying to commit suicide. A few weeks later he was found with a carving knife under his pillow, and later admitted having done this purposely with a view to getting his discharge from the Army. He could not read or write, and was sent to an asylum.

A case such as the above might possibly give rise to considerable discussion as to proper diagnosis and disposal, but where the mental defect was so well marked it was felt that he could not in any way be held responsible for his conduct.

The two cases showing acute transitory hallucinatory states had very well-marked alcoholic histories, and the case with epilepsy was a well-marked case of imbecility; these cases need no special comment.

In addition to what has already been said, it may again be stated that, so far as our information goes, 12 of these cases had been previously discharged—some several times—either from the Army or Navy; 4 had previously been treated in asylums; 10 had made attempts at suicide; 4 had had criminal records; one described himself as a conscientious objector, and one was a sexual pervert.

Dementia Præcox.

Out of the 43 cases comprising this group 20 were able to be sent to their homes, 22 were sent to asylums, and the remaining case was transferred to another hospital. These statistics, small though they may be, again simply go to show that certain types of individual would be better not enlisted, not only because they quickly proved themselves to be inefficient, but also because they are liable at any time to become a very grave danger to their comrades. Many untoward accidents happening on active service and during training would never take place provided greater care was taken in regard to those who were enlisted, and in apportioning men work for which they were suited. This point is especially important in considering the dementia præcox type of case. Their sudden, impulsive, homicidal outbursts are of a peculiarly dangerous character. The following case is one in point :

(1) No. 6762, Rifleman G. W—, æt. 27, while in camp on November 27th, 1916, suddenly attacked the man sleeping opposite to him, and inflicted on him three severe wounds with his bayonet. He was violently excited, stated that "voices" had told him to kill the man, and, later, said the voice had been the voice of God. This episode took place only three weeks after he had been enlisted. On admission to this hospital, he was quiet and composed in manner, but complained of buzzing and "tick-tacking" in his head, and apparently for a long time he had had the suspicion that someone had been wanting to do him harm. In contrast to that idea, he used to comfort himself with the thought that God was watching him, and after prayer he would feel composed. During his first night in hospital, he became suspicious of the orderly, told him not to play any games on him, and said that he was experiencing peculiar draughts and noises. He had also visual hallucinations. In reference to the homicidal assault above noted, he stated that one night he heard a voice say to him : "That man is your son—kill him." He then added : "But I am all right now, doctor, when I pray—these noises and draughts then go away—and I've got a son—Amy got baby, but he is only a baby, and this was a man." It appears, however, that he has never seen his baby, that it was born out of wedlock, and no doubt it was on account of these very reasons that the homicidal assault was committed. His orientation, memory, grasp on general information, etc., were all intact, but, throughout his hospital residence, he was dangerous and impulsive, and was committed to an asylum.

This case shows excellently how a man, who no doubt had been suspicious and unstable in civil life, readily broke down under the stress of military training, and in consequence his latent trends were brought forcibly to the surface.

(2) No. 20740, Private A. S—, æt. 33, had only been three weeks in the Army when he had to be admitted to the Military Hospital, Ripon. He stated that as soon as he went to camp the men started to persecute

him, pulled at his privates, poured things on him, etc. They took money out of his letters, interfered with him in his sleep, and in various ways tried to injure his health. Shortly after his admission to hospital, he was able to readjust himself, and in a short time was able to go home to his friends. This patient had been a bomb-maker in civil life, and had been doing efficient work, while as a soldier he was worse than useless.

(3) No. 33832, Private T. S—, æt. 37, on admission stated that for twelve years he had been hearing "voices" which had been controlling all his actions. It was a "nurse-maid who put the voices on him." This man, however, had served in the Army for seventeen months, but about Christmas, 1915, he heard his thoughts being repeated aloud, he was asked to sing and to do all sorts of strange things, and it was all done by electricity. Such a case should never have been enlisted.

(4) No. 6615, Private T. G—, æt. 29, had been in the Army for two weeks. While in camp he gradually lapsed into a semi-stuporous state which lasted for three days, and this was succeeded by a rather elated state, with fantastic, ill-defined delusions and auditory and visual hallucinations. On admission to this hospital he was dull and uninterested, behaved in a strange way, wanted to shake hands three times with the medical officer, and stated that he had worn boots without socks so as to save his life. He admitted hearing voices talking to him, said that he was a brother of Jesus Christ, and expressed many vague delusions. He seemed dreamy and abstracted. His sister had been a patient in an asylum. Previous to joining the Army this man had been doing satisfactory work on his father's farm.

This case again serves to illustrate how an individual of a certain type of make-up was quite unable to adapt himself to a situation, and on account of certain predisposing factors developed a picture similar to that seen in cases of dementia præcox.

(5) No. 33085, Private A. H—, æt. 19, on December 11th, 1916, while undergoing detention for over-staying his leave, commenced to have attacks of violence, alternating with periods of brooding. He habbled about his past life, his petty thefts, his untruthfulness, and his sexual irregularities. He had had asylum treatment in civil life. On admission to this hospital he was in a semi-stuporous, resistive, catatonic state, wet and soiled himself, and attempted to eat his excreta. He maintained fixed positions, and did not respond to painful stimuli. He had to be urged to take his food, was usually mute, but would have periods when he would pray and blame himself for his past life. He was transferred to an asylum.

(6) No. 2381, Private W. P—, æt. 20, on July 20th, 1916, was sentenced to prison for 112 days for desertion. Two days later he cut his throat with a razor and was placed in hospital. While there he became strange in his manner, was dull, stupid, and refused to speak, was dirty in his habits, masturbated openly, and was subject to sudden, unprovoked, impulsive outbursts. On the night of his admission to this hospital he suddenly got out of bed and smashed a glass case in which the emergency key was kept. As a rule, he lay in bed in a state of stupor,

was mute but sometimes mumbled the word "mother," was dirty in his habits, tended to retain his urine, and did not react to pin-pricks. Gradually, however, he made a fair recovery, and was discharged to his friends.

(7) No. 6005, Private J. H—, æt. 32, had been in the Army for about five months. From November, 1903, to September, 1908, he had been a patient in the Three Counties Asylum. He was admitted to this hospital from Detention Barracks, Wakefield, where he had been undergoing a sentence of eighty-four days for insubordination. He had had two previous periods of detention of twenty-one and fourteen days respectively, also for insubordination. On admission to this hospital he was rambling and inconsequential, frequently tended to answer quite irrelevantly, and, mentally, was totally irresponsible. He was dull and stupid, but no definite delusions or hallucinations could be elicited.

(8) No. 28686, Private T. S—, æt. 24, the first day he joined the Army had been found incapable of duty. Soon after joining he deserted, and for this offence was fined £2. He was described as always having been reserved and as never having made friends. On admission to this hospital he had a sullen, vicious expression, refused food, and was resistive to all care and attention. He retained his urine, showed catalepsy and *flexibilitas cerea*. On one occasion he made a sudden, vicious assault on the corporal in charge of the ward. He was transferred to an asylum.

In these last four cases no doubt there again might be a certain amount of disagreement in regard to the diagnosis, and the first three cases might be looked upon and considered as cases of "prison psychoses"—that is to say, psychoses which arose in response to their prison punishment. One can say, however, that all of these men were of a type of make-up which specially predisposed them to a mental upset, and in one of the cases, anyway, the punishment meted out seems, to say the least of it, to have been hardly the proper way to meet the situation.

Manic-depressive Insanity.

Out of the twenty-four cases belonging to this group, seventeen showed attacks of depression, and the remaining seven attacks of excitement. Out of the seventeen depressed cases twelve had made determined attempts to take their own lives, usually by means of cutting their throats.

It is interesting to note that only three of these twenty-four cases had had previous attacks of mania or melancholia, and, in consequence, it might be said that these were really not true manic-depressive cases but rather *symptomatic depressions*; but the classification is not the important thing, and, for the sake of brevity, they have all been included in the manic-depressive group. Owing to the rapidity of inflow and outflow of patients, we have had to content ourselves with a very

sketchy account of the symptomatology, and in that respect no special features have been prominent. The psychosis has been brought about by a failure of adaptation, and no doubt in some cases enforced absence from home, worry over domestic affairs, etc., were important contributory factors. Two cases of depression admitted frankly enough that their attempts to commit suicide were due to the fear of being sent on active service, while another admitted that he took this means of "working" his discharge from the Army.

Three of these cases are of sufficient interest to warrant their being given in detail :

(1) No. 6784, Private F. H. B—, æt. 24, had been called up on August 8th, 1916. A few weeks later, while in camp, he became depressed, wrote letters home pointing to "religious mania," and seemed to be afraid lest he should be sent to France. He was described as self-centred and depressed, was full of ideas of unworthiness and wrongdoing, and thought there was no hope for him in this world or the next. It was while in this condition on November 16th, 1916, that he attempted to cut his throat with a pair of scissors. On admission he was depressed and self-accusatory, said he had been eating too much food, had neglected his home, and had led a bad life. He answered questions promptly, conversed coherently, stated frankly enough that he had made the attempt on his life because he became frightened lest he should be sent to France, and, in consequence, thought that suicide would be the best way out of it. He had a good appreciation of time and place, his memory was intact, and he had a good grasp on current topics. At school he had been in Standard VII. Physically, apart from his cut-throat wound, there was no evidence of any abnormality. During his stay in hospital he improved very greatly, and probably would have made a complete recovery, but in the course of four weeks he was transferred to an asylum.

(2) No. 51610, Private J. F. H—, æt. 21, had been in a territorial regiment since 1913. On October 15th, 1916, he made an attempt at suicide by hanging. At that time he complained of a heavy feeling in his head, and stated he had heard voices telling him to do away with himself. On admission here he was able to give a good account of himself, answered questions promptly and relevantly; he complained of dizzy feelings in his head and of his eyes being weak. His depression had for the most part cleared up, and the auditory hallucinations which he had formerly suffered from had practically disappeared. He stated that his depression had been dependent on his being put on a draft for France, he could not face up to it, thought it would be better to "do himself in," and in consequence made his attempt at suicide. He had always been a nervous boy, subject to headaches, and his nervousness and general unsteadiness had been heightened by a Zeppelin raid. He had a good appreciation of time and place and his memory was excellent. He had never had any previous nervous or mental illness. He was discharged and sent home.

(3) No. 22616, Private J. T—, æt. 40, had been in the Army for about six months. This patient was received from the 1st Northern

General Hospital, Newcastle, with a history of having, on October 30th, 1916, attempted to commit suicide by strangulation. He was tried by court-martial, but apparently (we have no record) was adjudged insane. Ten years previously he had been hit on the head by a "spinner," and since that time had been subject to headaches. On admission, he was mildly depressed, complained of headache and dizziness, and said that at times he felt dazed. At first he denied all remembrance of having attempted his life, but stated that he had become depressed on account of a misunderstanding with his wife. Later he admitted that the difficulty with his wife had played a very secondary rôle, and that he had attempted suicide simply because he wished to leave the Army. There was no evidence of any delusions or hallucinations. He had a good appreciation of time and place and his memory was excellent. He had been married for ten years, had four children, and by occupation was a steel worker. Physically, there was no evidence of any gross disease. He was able to be discharged to his home.

The above three cases may be considered together, as they all tend to bring up the same question, *viz.*: How far should these men be held responsible for their actions? Should they be held as having done wrong knowingly, and be punished accordingly, or should they rather be pitied and discharged?

Legally, I suppose, they would be held guilty of having committed a crime, but, on the other hand, one has to recognise that they had been put face to face with a situation which, constitutionally, they were quite unable to adequately meet.

A case which was much more "pathological," and where there was no question of the determination to take his life, was the following:

No. 6114, Private P. G—, æt. 35, had been in the Army for eight months. In civil life he had been a professional musician. On October 9th, 1916, he was admitted to the Military Hospital at Catterick, suffering from a self-inflicted, penetrating gun-shot wound of the left chest. For about eight weeks previous to this, he is described as having been nervous and depressed. On admission to this hospital he was in an exceedingly depressed, miserable condition; he whined and cried, and constantly reiterated that he was not fit for the Army. He moaned aloud, kept the other patients awake at night, was restless and sleepless, and had to be forced to take his food; on one occasion he had to be tube-fed. Apart from his agitated, apprehensive, and depressed state he showed no abnormal features, had no hallucinations or delusions, had a clear appreciation of time and place, and an excellent memory. He stated that when he first enlisted he had been in the band, but in July, when the band was disbanded, he was transferred to the infantry. Ever since that time he had been nervous and depressed, the work was very uncongenial and trying to him, and he lived in constant dread of being sent abroad. It was undoubtedly on this account, and because of the feeling he had that he would prove himself a coward, that in desperation he attempted to take his life. For the first few weeks following his admission he showed some improvement in his physical condition, but

he continued to be exceedingly agitated and depressed, and even although assured time and again that he would probably receive his discharge, he continued to be obsessed by the fear that he again would be marked "fit" and shot for cowardice, as people would not realise how his nerves paralysed him. His father had died from delirium tremens, and his mother from some form of "creeping" paralysis, but he himself had never previously had any treatment in either hospital or asylum. He died suddenly one night about one month after admission.

In a case such as the above, one could not have any doubt in regard to the sincerity of the man. He was a married man, with three children, who had held a steady position in a well-known London orchestra, and he had enlisted voluntarily. The strain of military training, the idea of being put on a draft and sent abroad, and the thought of leaving those who were near and dear to him was more than his constitution could stand, and hence the breakdown. Such a man certainly could not, or at least should not, be held responsible for his crime; the pity is that attempts should be persevered in to make such a man an efficient soldier when obviously it was going to be just so much time wasted. It is a case such as this—and there must be many of them—that makes one assert, and reassert that the Army should, in any case at the large training camps, have some one who is capable of carrying out a satisfactory mental examination of such patients. It not only would be a humane thing, but also, economically, it would well repay the State.

In regard to the cases showing maniacal symptoms, nothing special need be said.

Dementia Paralytica.

Nineteen, or nearly 10 *per cent.*, of home troops examined were typical examples of this disease. Thirteen of these were transferred to asylums, four were taken home against advice, and two died. Eleven of these nineteen cases had exhibited mental symptoms within the first six months of enlistment, so it is reasonable to suppose that, if a satisfactory mental examination had been carried out, the probability is that some of these men would never have been enlisted.

Surely, it is important that the recruit should be subjected to a mental examination. If his feet, or his heart, or his lungs are affected, and still he is enlisted, then he alone will suffer, but if his mind is affected, especially with such a disease as general paralysis, he will not only be a very grave danger to himself but also to all his associates.

Several of the most striking cases may be quoted :

(1) No. 127166, gunner, æt. 41, had been in training for one month. He was admitted from Newcastle, where he had been diagnosed as

"Delusional Insanity." On admission, he was found to be a quiet, pleasant-spoken, plausible man, who said he had a brother-in-law called Horatio Nelson, that his wife's maiden name had been Jessie Nelson, and that his wife's family was related to that of Lord Nelson (all of which was a delusion). He had a feeling of well-being, was very self-satisfied, but otherwise he did not express any grandiose delusions. His memory was defective, he made mistakes in doing simple, serial calculations, and he had no appreciation of the serious nature of his disorder. Four years previously, while engaged in civil work he had been invalided from India. While in the Army, he had been subject to "weak turns," and was quite unfit for his work. Physically, he had unequal, irregular, Argyll-Robertson pupils; his speech was slurring and sticking; his tendon-jerks were exaggerated; tremors of hands, tongue, and facial muscles. His Wassermann reaction was positive, both in his blood and cerebro-spinal fluid.

(2) No. 8113, Private A. I—, æt. 33, had been in the Army for four months. For twelve months previous to his enlistment, he had, according to his friends, been mentally affected. He was admitted from camp, where he is stated not to have known his regiment or company, to have been slow and slovenly, unable to understand the simplest drill, and to have been thought to be mentally deficient. On admission he had a feeling of well-being, and did not realise that he was ill in any way. He gave the year as 1907, and had an exceedingly poor memory. Physically, he showed all the classical symptoms of general paralysis. He was transferred to an asylum.

(3) No. 45771, Private W. B—, æt. 37, had been in the Army eleven months. On November 14th, 1916, he was admitted to the Military Hospital, Seaforth, where he was diagnosed as suffering from general paralysis. On admission he was in an excited, megalomaniac state, stated that he was General B—, that he was the head of the nation, a millionaire, etc. He had no realisation of the serious nature of his disorder. Physically, he had Argyll-Robertson pupils, absent tendon-jerks, slurring speech, and tremors of tongue, hands, and facial muscles. His Wassermann reaction was positive with blood-serum and cerebro-spinal fluid. A letter received from a physician who had attended him for two years previous to his joining the Army, in part stated: "For two years previous to his joining the Army, he presented symptoms of locomotor ataxia (his acceptance for service was doubtless an oversight). In the early part of last year (1915) he had a cerebral attack."

(4) No. 232333, Private A. H—, æt. 39, had been in the Army for one month. His wife stated that for eight weeks previous to his enlistment he had been mentally disturbed, but, irrespective of her protest, he was recruited. On August 25th, 1916, he was found wandering about Liverpool in a lost condition, and was quite unable to give any account of himself. On admission he was in an elated, over-talkative state, was dirty in his habits, and noisy and disturbing. He refused to co-operate satisfactorily, but his memory was definitely defective, and he had no insight. Physically, his pupils were unequal and irregular, his right did not respond either to light or on accommodation, his left did not respond to light, but accommodated; his speech did not show any disorder; his tendon-jerks were exaggerated, but his

left knee-jerk was more exaggerated than the right; tremor of hands and tongue. He was transferred to Armagh Asylum.

(5) No. 3027, Private K—, æt. 37, had been in the Army for sixteen months. Since January, 1915 (he was admitted to this hospital in November, 1916) he had had five crimes against him for being slovenly, late on parade, etc., but still his disease passed unnoticed. Later he developed absurd grandiose delusions, said that he owned all the motor cars in the world, that he was the King of England, etc.; and by the time he was admitted to hospital he was in a very demented condition. He exhibited all the classical physical signs, suffered from retention of urine, and died in the hospital.

Such cases show only too clearly the gravity of the problem which has to be tackled, and it does not require much imagination to think of the many other cases many of whom have been sent on active service, and no doubt have been placed in positions of responsibility, Surely it does not require much time to examine the pupils and tap the knee-jerks, and yet how frequently it is omitted; often, may be, when anomalies are present they are either not interpreted at all, or else are misinterpreted.

I append two tables which speak for themselves:

Onset of Mental Symptoms Following Enlistment.

	Mental Def.	Dem. Præc.	Manic-dep.	G.P.I.
Under 1 month in Army . . .	10	7	3	5
Over 1 and under 3 months . .	12	4	4	1
Over 3 and under 6 months . .	20	17	2	5
Over 6 months and under 1 year	11	5	9	2
Over 1 year	8	10	6	6
	61	43	24	19

Final Disposal of Cases.

	Asylum.	Home.	Hospital.	Duty.	Died.	Total.
Mental defectives . . .	16	45	—	—	—	61
Dementia præcox . . .	22	20	1	—	—	43
Manic-depressive . . .	4	17	1	1	1	24
General paralysis . . .	13	4	—	—	2	19
	55	86	2	1	3	147

Alcoholic Insanity.

Seventeen or approximately 8 *per cent.* belonged to this group. The great bulk of these cases were men who for many years had been chronically addicted to alcohol, and who shortly after joining the Army developed acute, transitory delusional states with ideas of persecution directed against their comrades, but rapidly clearing up under hospital conditions. A few showed acute hallucinatory states with fear reaction, one was a case of delirium tremens, and one a case of mania with an alcoholic colouring. There was nothing about any of the cases to warrant any detailed description of them.

Traumatic Insanity.

It is a well-recognised fact that a severe head injury either in the nature of a concussion or a fracture, often carries in its train a transitory or permanent series of mental symptoms not infrequently changing the whole character of the individual. In some of these so-called traumatic cases it is, however, at times difficult to see the connection between cause and effect, and not unnaturally if a patient who at any time has had a head-injury ever develops mental symptoms, the tendency is for the head-injury to be held partly responsible, even although no symptoms supervened until many years later. In such cases it is often exceedingly difficult to see the connection between the injury and the mental symptoms, but nowadays sufficient cases have been described to constitute a definite entity known as traumatic insanity. The following case shows clearly the close relationship between a head-injury and the development of a mental disorder :

(1) No. 4546, Private T. W—, æt. 26, had been in the Army for three months, when on April 11th, 1916, he met with a serious accident, and was unconscious for about fourteen days. He was admitted to hospital where he was described as suffering from concussion, and symptoms of great cerebral irritation. On the subsidence of these symptoms, there was a total loss of memory; he did not know his name, nor his regiment, nor where his home was, nor any details of his accident. A gradual improvement took place in his condition, but he had been in hospital ever since, and was transferred to this hospital to be "boarded" rather than for any acute mental symptoms. On admission he was quiet, conversed rationally, but complained of persistent head pain. He had an amnesia for events immediately preceding the accident, and for the accident itself, and for fourteen days afterwards he was more or less unconscious. He has never regained any memory for that period while in this hospital, he had a clear realisation of time and place, his memory and retention were good, and except for his complaints of persistent and severe headache, always aggravated by exertion, he was in good condition. Physically, he had hyperactive tendon reflexes.

In the next case, the connection between the injury and the mental disturbance is not nearly as clear, and complicating factors are present.

(2) No. 5837, Private F. O—, æt. 21, had been in the Army for ten months. On November 2nd, 1916, he was admitted to this hospital from Colchester Military Hospital where he had been since October 14th, 1916, suffering from neuralgic pains in the head. His history stated that in April, 1916, he had fallen from the top of a hut on to the ground, injuring his head. He was stunned and dazed for two days but did not lose consciousness. While in the hospital at Colchester, he was excitable, restless and depressed, and peculiar and irrational in his manner and conversation. He described the pains in his head as being so severe that at times he felt he would like to shoot himself or throw himself out of the window, and on the night of October 26th, he did attempt to strangle himself. On admission to this hospital, he complained of headache, and of feeling depressed, irritable, and sleepless. He was quite coherent, was able to give an excellent account of himself, had a correct appreciation of time and place, and a good memory. He stated that he had always been a nervous, delicate, sensitive boy, and when nine years old suffered very greatly from an otitis following diphtheria. Ever since that time, he had really suffered with his head. While training, he found the drilling and marching too much for him, and usually had to get his comrades to help him with his kit. On account of this, he was given clerking work to do at Divisional Headquarters, and apparently was quite happy, but when a re-arrangement was made the patient was ordered to rejoin his regiment. It was just at this time that he again began to suffer from pains in his head, and reported sick. Physically, he had hyperactive tendon reflexes, and a rapid pulse of 110 per minute.

In this case, then, we have several ætiological factors all of which may be said to play a certain part. In the first place, the history of diphtheria with ear trouble and headache following, the stress of training, and the head injury. It seems to me that all the above factors have been exceedingly important; but perhaps the most important factor of all is the psychological one, and by that I mean that here we had a boy who found the stress of military life too hard for him, who was quite happy as long as he was doing work which was congenial to him, *e.g.* clerking, but when ordered back to his regiment he began again to suffer from headache, depression, etc. The case seems to exemplify very well one type of "defence" mechanism, and would immediately bring up the question as to whether such a case should be looked upon as malingering. The patient himself, however, was altogether too honest to be so classed; he was constitutionally, physically, and mentally, not equal to his military duties; his defence was for the most part unconscious, and at all times he stated that he would be willing to try again to do his bit, if it was thought advisable to try him.

In the following cases the head injury was more remote in time from the development of the mental disorder.

(3) No. 2466, Private H. V. H—, æt. 27, had been in the Army for six months. He was admitted to this hospital from the Military Hospital, Ripon, where he had been since August 24th, 1916. In 1912 he had been pulled from a waggon, fell on his head, and is said to have sustained a fracture of the base of the skull, was unconscious for a period of twelve hours, and bled from his nose and ears. Following this on several occasions, his wife had stated, he had become dull and irritable, and had wandered away from home in a dazed kind of way. At Ripon one night while in the hospital he suddenly jumped out of bed and attacked the sentry. Next day he declined the most of his food, stating that it was poisoned; but on the following day he again seemed to have regained his normal condition. On admission (January 16th, 1916), he complained of sharp shooting pains in his head, but he was quite clear mentally, was cheerful enough, and had no hallucinations or delusions. While in camp, he said that he had been told that one night he had tried to do away with himself, and another time he was found with nothing but his shirt on at a place several miles distant from the camp. He had no recollection of the episode at Ripon Military Hospital, but says that he was told that he had nearly strangled one of the guards. His relatives have all stated that up to the time of his accident he had been a strong, healthy, active man who had never ailed in any way. He realised himself that there had been a change in his disposition, he was much more excitable and irritable than ever previously, and he experienced an almost constant feeling of tightness in his head. He has also noticed that he cannot read for long because the words all tend to run together, and to become blurred. Physically, he had tremors of tongue and hands, and exaggerated tendon jerks.

In this case there would seem to be no manner of doubt but that this man's disability was entirely due to his former head injury, the stress and excitement of military training simply acting as a determining or aggravating factor.

(4) No. 83648, Gunner J. L—, æt. 39, had been in the Army for seven months. This patient was received without any notes accompanying him. On admission, he was found to be dull and depressed, complained of pain across the top of his head, and of what he called "loss of mind." He stated that three years previously, when working in the pit, his head had been split open; he was unconscious for about ten minutes, had to have five stitches in his wound, and was off work for three months. Since that time he describes himself as having been irritable and cantankerous, suffered from headache and dizziness, and was afraid to touch alcohol because it seemed to go to his head at once, and he would become so dazed that he did not know what he was doing. On two occasions he was punished for absenting himself without leave, but he was unable to give any account of these "wandering" spells: one time he was away for twenty days, and during that time

could not tell where he had been, or what he had been doing. Intellectually he was of a poor standard, and in addition, he had been worried and depressed about being away from his wife. Physically, he showed no special disorder.

In this case, also, the head injury seems to have been the principal factor in the production of this man's psychosis. The mental picture is quite characteristic of traumatic insanity. The worry over leaving home and the stress of training must, however, be reckoned as powerful contributory agents.

(5) No. 456, Rifleman J. N—, æt. 46, had served through the South African War, but while in South Africa had fallen from his horse, sustaining a depressed fracture of his skull. He was invalided from the Army, and a few months later in Ireland, probably as a result of alcohol, he developed an excited, suspicious, delusional state, was certified as insane, and committed to Omagh Asylum, where he remained for three years. At the outbreak of the present war he re-enlisted, and had been doing garrison duty in India. He cannot quite explain what happened to him; he thinks the heat must have affected him, but the last thing he remembers is drawing his pay on June 23rd, 1916, and from that time on he has an amnesia up until the end of September, 1916. It appears from the history that in June he had become excited, expressed delusions of persecution, threatened to shoot his officers, and apparently was tried by court-martial for striking an N.C.O. He denies remembrance of any of these episodes. On admission to this hospital he had practically regained his normal condition. He told how following his head injury an entire change took place in his character, he became irritable and cantankerous; if he took drink it sent him mad, and on this account he had frequently got into trouble with the civil authorities, and also had lost his stripe. Except for his period of amnesia his memory seemed to be intact. Physically, he had a small depressed fracture of the vertex of the skull.

In this case, then, we have a man who fourteen years previously had sustained a fracture of the skull, the symptoms of which reasserted themselves owing to the stress of military service and the hot climate of India.

Psychoneuroses.

Belonging to this group are ten cases, nine of which were anxiety states, and the other was a case of the nature of a conversion hysteria. In practically all of these cases a one-word labelling was out of the question, but all of them in common were sensitive, highly strung individuals who, face to face with a situation which normally they could not meet, developed certain nervous symptoms which completely incapacitated them. In these cases it was found that a change to a suitable hospital and general care and attention were sufficient to cause a betterment.

(1) No. 38900, a private, on September 12th, 1916, was admitted to the Military Hospital, Pembroke Dock, with the following history: "While in a state of great nervous excitement he inflicted on himself a skin-deep wound of the neck. He complained of intense frontal headache, and seemed in a dazed condition." On October 16th, 1916, when admitted to the Lord Derby War Hospital, his condition had quieted down, he was feeling better, was sleeping well, and felt that he was getting a grip on himself. He had enlisted in May, 1916, but from the first Army life had not suited him, he was depressed by it, and the way his N.C.O.s treated him grated on his nerves. At times his head would feel dizzy, it was impossible for him to collect himself, at nights he was restless, felt he could not contend with it all, and in consequence attempted his life. He was correctly orientated for time and place, he had a good grasp on current topics, and realised his condition. He had come from a poor stock, had always been nervous and sensitive, and greatly devoted to his mother. His father had died before he was born. When asked about getting married he replied that so long as his mother lived—"she has done so much for me"—he would not think about it. Physically, he was very shaky and nervous, had coarse tremors of tongue, facial muscles and hands and hyperactive tendon reflexes. In the course of a few weeks he made a complete recovery, and was discharged home.

The following case, which was diagnosed as one of conversion hysteria, was as follows:

No. 247412, Private F. N. T—, æt. 25, had been in the Army for three months. He was admitted to this hospital from Fort Pitt, Chatham, where he had been diagnosed as a case of general paralysis. He stated that ever since joining the Army he had been out of sorts, he had been nervous and dull, and when questioned he had to be urged to answer. He had not done any drills, etc., but all along had been employed in the mess-tent. He was taken to hospital on account of difficulty in walking, and on admission he showed a condition of astasia-abasia, and when brought to the office refused to stand or walk, but was dragged sliding along the floor. Otherwise he showed no special symptoms, his memory and general grasp on things were excellent. Physically, no signs of general paralysis, nor yet of hysteria, apart from the astasia-abasia, could be demonstrated. Following his admission to the hospital, a rapid improvement occurred in his condition, his nervous symptoms entirely disappeared, and soon he was just as well as he had been.

Whatever one likes to call such a case, there can be no doubt that here was an unstable type of individual, who was quite unable to adapt himself to the exigencies of military life, and in consequence broke down.

Paranoid States.

All of the eight cases belonging to this group were men well on in middle life, the average age of the group being forty years (youngest

thirty-four and oldest fifty). The majority of them were men who had formerly been in the Army, who for one reason or another had been previously discharged, but who re-enlisted when the present war broke out, or shortly afterwards. These men had been employed on guard duty or at labouring work, but the stress proved too much for them, they were unable to adapt themselves to their situation, developed ideas of persecution, and also auditory hallucinations which were usually referred to their comrades. Some of these patients admitted alcoholic over-indulgence, and no doubt the development of their persecutory ideas was largely caused by this factor. None of the cases have seemed sufficiently noteworthy to warrant special mention.

Toxic-exhaustive Psychoses.

All of the three cases in this group showed transitory mental disturbances which had entirely cleared up by the time they were admitted to this hospital.

Epileptic Insanity.

No. 32504, Private T. J. D—, æt. 28, ever since the age of twelve suffered from epileptic fits. He is described as always having been childish, irritable, and quarrelsome. In 1915, he had been discharged from D Block, Netley, on account of epilepsy, but he re-enlisted again in January, 1916, and in May was sent to India. In July, in India, he had three epileptic fits, and on October 31st was boarded at Quetta as a case of epileptic dementia. During his Army career he had had many crimes recorded against him for being drunk, for bad language, for not complying with an order, and for striking a superior officer. On admission to this hospital, he was noisy and troublesome, defied the sergeant in charge of the ward, and had to be put in a single room. He was of poor mentality, had difficulty in comprehending simple questions, and had an exceedingly poor memory. Physically, there was no evidence of any gross disease. The case was then a clear one of epileptic dementia, who most certainly should never have been sent to India.

Another case which could not be quite so easily diagnosed was as follows :

No. 5980, Private L—, æt. 22, had been in the Army for four months. He had been taken to the Military Hospital at Pembroke Dock with a note from a physician certifying that he was suffering from epileptic mania, and that he had had epilepsy ever since childhood. On admission here, he stated that he had been feeling quite well until August 9th, 1916, when on a route march he started to feel badly, and had to fall out. Since that time he had never felt right, and had suffered from terrible headaches. He remembers getting excited, and jumping into the river at Haverford West, and for several hours did not remember anything until he came to himself in hospital at Pembroke

Dock. He gave a history of having "fainting fits" since boyhood, but there was no history of an aura, of tongue-biting, or bed-wetting, etc., and, from the description, one could not be sure whether the case was one of true epilepsy. Furthermore, during his hospital residence he had no such attack. Mentally, he was quite bright and intelligent, took an interest in what went on around him, and eventually was able to be discharged home.

Organic Brain Disease.

These two cases were men of forty-two and forty-eight years respectively, with thickened blood-vessels, complaints of headaches and dizziness, and the general picture of arterio-sclerotic brain disease.

Conclusion.

It is almost unnecessary to dilate further on the array of cases which has been reported. They have been presented with one principal object, *viz.*, to draw attention to and to emphasise the fact that more care should be exercised in enlistment. It stands to reason that a man who is mentally enfeebled would be much more liable to break down than a healthy man, and in consequence if such a man is enlisted then undoubtedly the Government must accept all further responsibility for him. The Government have recognised that obligation, and it is gratifying to know that the man who breaks down during training on account of "certifiable insanity" is regarded as pensionable when there is definite evidence to the effect that he was insane at the time of enlistment; even those who have had one previous attack of insanity are regarded as pensionable. Such is no more than justice, but it would seem to be possible to prevent a great many of these men from ever entering the Army provided certain hereinafter stated precautions were taken. To meet this difficulty in some degree various psychiatrists of standing have been appointed to various commands throughout the country to inquire into such cases of suspected mental disorder as might be brought to their notice. There can be no doubt that such a step is one in the right direction, but the whole matter is of so great importance that one cannot but wonder whether the means taken are sufficient to meet the difficulty, and whether some additional steps ought not also be taken. It is probably true that the majority of recruits are drawn from the large industrial centres, and, therefore, it would seem feasible that someone capable of making a satisfactory mental examination should constitute one of the recruiting medical officers in such a centre. Cases in any way doubtful could at once be referred to this authority, and no doubt arrangements could easily be made for this officer to see and examine cases occurring in out-lying districts. Such a person should also have power conferred on him to

recommend the branch of the service for which the recruit would be most suited, and his opinion should be regarded as final. It is readily admitted that many cases of mental defect and of chronic states of mental illness could well be employed in the Army, but such persons should be given work for which they are suited—work, that is to say, of a purely mechanical nature, where no special initiative would be required, and unsuitable cases could be prevented from going on active service. By so doing the State would not only acquire a set of men who would do useful work but also, it is reasonable to suppose, that fewer men would break down, and in consequence the State would benefit by having less expense in the evacuation of cases, and less expense in regard to hospital treatment and pensions.

The cases which one should be chary of accepting are those who are grossly defective, those who in civil life have shown definite neuropathic traits, and those who have previously suffered from serious head injuries.

The argument advanced against all this is to the effect that special mental examinations would take a great deal of time, that expense would be entailed in employing specialists, and that possibly some who would make good soldiers would not be passed as fit by the mental expert. No doubt such statements in certain instances would prove true, but it would seem to be a much sounder policy to run the risk of losing a man or two than to enlist Tom, Dick, and Harry irrespective of their mental status.

My excuse for these remarks is that the number of nervous and mental cases on our hands is now assuming large proportions, suitable accommodation and treatment for such cases is always and increasingly difficult to obtain, and, furthermore, prevention is always better than cure.

At the beginning of the war no one had any realisation of what an important problem the care and treatment of our nervous and mental cases was going to be, but as the war has progressed we have come to know how urgent the matter is. An index of the state of affairs with our Army may be gathered from the fact that in the United States Army in times of peace mental disorders in all their forms are responsible for one-fifth of the total discharges of enlisted men. This does not include discharges for neurasthenia and hysteria. The discharge rate per 1000 was 2.64, tuberculosis in all its forms coming next with a ratio of 1.56 per 1000. "During the mobilisation of the regular troops and militia on the Mexican border last summer and fall, mental disorders again led in the causes for discharge." In a recent number of the *Journal of Mental Hygiene*, an editorial on Psychiatry in War comments as follows: "We must recognise the great practical importance of providing in the organisation of military medical units in peace and war adequate facilities for treating mental disorders. Such facilities include provision for the observation of suspected cases, special arrangements

for transportation from posts in advanced zones to those at military bases, and facilities for effective treatment at such bases. . . . Recovery in mental diseases depends very greatly upon the promptness and efficiency with which treatment is received. . . . Such treatment can only be carried out by physicians and nurses skilled in mental disorders." No one, I am sure, could question any of the above remarks, and the sooner we, as a nation, come to realise that it is of the utmost importance to tackle this problem of nervous and mental disease occurring in the Army, the better it will be for the Army, for the State, and for our national peace and security. While yet in the midst of war it may seem a far cry to think of days of peace; but when peace does come, it will be of value to have some plan and organisation in readiness for dealing with mental cases. The majority of men joining the Royal Army Medical Corps do so within the first year after graduation in medicine, and, in consequence, the great majority—if not practically all—have no knowledge of psychiatry except what they have acquired as medical students. If, then, our Army is going to be a really efficient Army, the authorities should recognise that it would be sound policy to select men who have shown an aptitude for psychiatric work or who have an interest in it, and give these men facilities for special training. Just as the welfare of our soldiers is now being looked after in regard to venereal diseases by the establishment of clinics presided over by specially trained men, so also a group of men could and should be trained in mental diseases, whose business it would be to prevent the enlistment of those who would be "unlikely to make efficient soldiers," and who, in case of mental illness, would be adequately trained and equipped to deal most effectively with it. To again emphasise what has already been said, it is suggested:

(1) That cases showing mental deficiency, neuropathic and psychopathic traits, and giving a history and showing evidence of severe head injury should, for the most part, be rigidly excluded from the Army.

(2) If it is necessary to recruit a certain number of these individuals, then it should be definitely ruled that under no circumstances should they be permitted to go on active service; such men should be given suitable work at home or at the base in France.

(3) To effect the above objects it is suggested that a certain number of mental specialists should be appointed to the recruiting boards, and recruiting medical officers generally should be given definite instructions to pay attention to all cases of probable mental defect or disorder, and refer such cases to the expert.

(4) At the large training camps there should be one mental specialist whose business it would be to examine recruits, and to have those obviously unfit immediately rejected—once and for all—from the Army.

(5) It is only by adopting methods such as the above that we will

ever come to grips with the wastage occurring in our Army due to nervous and mental disease.

(¹) These cases were all studied at the Lord Derby War Hospital, Warrington, Lancs.

Evolutional Progress in Psychiatry: A Plea for Optimism. By
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I.

HUMAN perfectibility, or even entire social amelioration, appear with the passage of time to recede into a yet further distance; and, whilst forming subject-matter for academic discussion and for visionary imagination, they hardly come within the range of practical politics. With them, as with disquisitions about the hereafter, there has been a tendency to allow "other worldliness" to obscure the necessity for doing our duty here and now, and letting the distant future take care of itself. To those who object that this view is a sordid, or at least a selfish one, it may be answered that if we observe the Golden Rule—if even we practise but a negative virtue by refraining from doing evil—we shall yet make for the desired goal, possibly as rapidly as those who, their eyes fixed on that distant point, fail to observe the obstacles which lie immediately in their path, and who have, again and again, to arise bruised and disheartened by their stumbles and disappointments. It may indeed be that their aims are but illusions, mere figments of the fancy, impossible of realisation. "Uniform and universal knowledge, social salvation and sovereign goodness, a golden age to come excelling a past golden age, a Paradise regained in lieu of a Paradise lost, in fact, a kingdom of heaven on earth or elsewhere, are not yet matters with which the sober-minded scientist can grapple¹;" and nescience can only formulate them in phraseology which lacks verisimilitude even to those who utter it. It is doubtful whether the projectors of ideal commonwealths would have desired to have been themselves inhabitants thereof; even if they had had the will it is certain that they would not have had the ability to carry it into effect. Much of their work is perchance energy misdirected, and the words of Milton may be applicable to others as well as to him of whom he uttered them. "Plato, a man of high authority indeed, but least of all for his Commonwealth, in the book of his laws, which no City ever yet received, fed his fancie with making many edicts to his ayrie Burgomasters, which they who otherwise admire him wish had been rather buried and excused in

¹ *Organic to Human*, by Henry Maudsley, p. 129, London, 1916.

the genial cups of an Academick night-sitting." It is no use, as he further remarks, "to sequester out of the world into Atlantick and Eutopian politics, which never can be drawn into use, and will not mend our condition ; but to ordain wisely as in this world of evil."¹

It may be said that this is an inauspicious opening to any essay which is entitled "A Plea for Optimism," and that, moreover, the time is inopportune when the majority of the human race are concentrating their attention on the best methods whereby they may destroy one another. Yet optimism in respect to any matter may be permitted if it can be proved to be reasonable ; and the bitterest strife has an ending—even if the cessation be but the product of exhaustion, and, therefore, only sufficient to allow of recuperation for another outburst. Is there, then, foundation for hope of still further advancement in our knowledge respecting mental disorders ? And may we believe that we shall yet improve our therapeutic methods ?

A consideration of the progress made in science generally, and of psychiatry in particular, appears to warrant us in adopting an attitude of reasoned optimism. A brief historical survey may, therefore, be permitted, and an endeavour made to substantiate the claim herein advanced.

II.

It is only within very recent times that an attempt has been made to investigate mental disorders along those lines which have led to such successful results in other directions. For centuries it has been held either that they were due to some Divine infliction whereby demons were allowed to enter into and to afflict the body of the unfortunate sufferer, or they were produced by some disorder in a hypothetical "mind," which acted upon the brain and body, but which could not conversely be influenced by them. In both cases there was obviously no likelihood of research into physical substructure ; and, indeed, it is only slowly that, even at the present time, the belief is beginning to prevail that it is necessary patiently to investigate the brain if any satisfactory conclusions are to be reached in psychology and in psychiatry. Even though relatively immense strides have been made in other branches of medicine by these methods, mental disorders have been left for the most part severely alone—so potent has been the influence of theological and metaphysical ideas. And now, when the relatively few workers have done so much already to illuminate the dark recesses of our knowledge of the brain and its functions, the reproach is often uttered that in psychiatry—the Cinderella of the sciences—research has lagged behind. "Only ignorance of the solid accomplishments in

¹ *Areopagitica*, Arber's reprints, pp. 49 and 51.

this field which recent years have brought forth, or inability to estimate their worth, can be responsible for the repetition of this complaint." Thus wrote Feuchtersleben, in 1844, of the often-repeated objection that the study of psychiatry had been "all too sadly neglected" and that alienists were, therefore, "still groping in the dark." The retort may surely be made that it is only beginning, and that in due course—without inferring any disparagement of the aspect of the sister-sciences—we may hope to see as sure, if not as speedy, a transformation as Cinderella experienced. But the fairy god-mother will have to make sure that she does not omit to touch the researchers with her golden wand! In other words, it is necessary to provide adequate funds for the purpose in order that it may not continue to be said that the person who devotes himself to research is worse off than if he had directed his energies along more commercial, more remunerative, channels.

The progress of ideas regarding insanity has not been an uninterrupted one. It may, indeed, be stated that movement has been rather in cycles. A period characterised by quite primitive conceptions is followed by one of considerable enlightenment, and this, again, gives place to darkness and ignorance. There is, however—or there appears to be—with each succeeding phase a wider diffusion of knowledge, and, at the same time, an increasing accuracy in regard to details. It is this more minute research, made possible by the invention of instruments of precision and by refinements in chemical methods, which is tending to differentiate the present period from all preceding ones. It is becoming increasingly more possible to investigate the fundamental structure of the Universe than ever before. Opinions and hypotheses may be disputed, controverted, perchance; facts are ultimately—except to the Berkeleyan!—convincing. It is in this respect that we may be said to have made our chief advance since Hippocratic times—in this, and in the substitution of other conceptions to replace the humoral pathology.

Prior to the Hippocratic period, there was one in which the hypothesis of supernatural influence held chief sway. A consideration of the evidence contained in the Old Testament makes this clear. Ideas of this kind, however, arose in much more primitive times. It appears likely that, even in the savage mind, as a result of the evil-doings of his aggressive neighbours, conjoined with the influence which dreams would almost inevitably exert, the idea of some supernatural force might easily arise. There is no evidence that a belief in actual beneficent or maleficent deities arose suddenly. Only by slow degrees and by gradual accretions of knowledge could such well-defined beliefs, as, for example, that of the personification of Good and of Evil in the form of Ormuzd and of Ahriman, come into being. Indeed, such a differentiation implies a precedent development lasting

for unnumbered centuries ; and it is probable that the dawning belief in extraneous, supernatural powers was one which looked upon the inscrutable power as a maleficent one. No matter, however, in what manner the belief was acquired, once established it was natural to ascribe to the influence of this power anything which passed the more or less limited comprehension of man. Thus strange and awesome happenings in the human body, such, for example, as epileptic fits or outbursts of maniacal fury, were set to the account of some mischievous demon or of some provoked deity. In some form or other this has been one of the most persistent and widespread of beliefs. From the time of Saul's mental derangement even down to the present it has been accepted as a satisfactory cause of mental disorder. We are told that because of Saul's sad dereliction of duty—he had failed to carry out the Divine command to slay utterly certain of his neighbours —“the spirit of the Lord departed from Saul and an evil spirit of the Lord troubled him”!¹ David, who was of an ingenious turn of mind and full of expedients—as his method of dealing with that obstacle of his, Uriah the Hittite, goes to prove—narrowly escaped the fate of many innovators when he endeavoured to allay the king's fury by means of music !

As among the Jews so in ancient Greece the belief in irritated deities as the prime movers in the production of mental disorders was the one which held sway. Hercules, for example, was pursued by the anger of Juno ; and she it was who afflicted him with epileptic fury. Euripides has described dramatically the outbursts to which he was subject, and how, in one of his homicidal attacks, he slew his wife and children.² Orestes, Ajax, and Meleager were smitten in a similar manner ; while the daughters of Proetus, King of Argos, were also rendered mad, but in their case the administration of hellebore counteracted the Divine wrath !

A remarkable period of enlightenment began, however, to dawn in the sixth century B.C. Pythagoras, physician as well as philosopher, initiated the movement which produced in the following century that illustrious thinker, Hippocrates. The Pythagorean school directed its attention chiefly to what may be described as prophylactic methods. By means of careful *regimen* they sought to bring about health of the body and soundness of the mind. Music was used by them also as a therapeutic method in dealing with cases of insanity. With the advent of Hippocrates (460–377 B.C.), medicine was for the first time set upon a rational basis. Instead of devoting his time to web-spinning and

¹ 1 Samuel xvi, 14.

² In the *Bacchæ* Euripides gives a further illustration of the same Divine anger. Bacchus produces madness in Agave, the mother of Pentheus, because of her opposition to worship of him.

phrase-mongering he set himself to the task of observing accurately the symptoms of disease and of constructing from the facts thus collected a practical science of medicine in contradistinction to the airy imaginings which proved so satisfactory to the majority of his predecessors—to say nothing of many of those who have come after him. This was sufficiently remarkable in regard to disease in general; but that he should have attained to the conception that mental affections could be included among bodily disorders is, indeed, amazing. That he should have been able to postulate such beliefs and live is an exemplification, too, of the tolerance which existed at that time in Greece. “I am of opinion,” wrote Hippocrates, “that the brain exercises the greatest power in man. This is the interpreter to us of those things which emanate from the air, when it happens to be in a sound state. . . . And by the same organ we become mad and delirious, and fears and terrors assail us, some by night and some by day, and dreams and untimely wanderings, and cares that are not suitable, and ignorance of present circumstances, desuetude and unskillfulness. All these things we endure from the brain when it is not healthy.”¹ In the same way Hippocrates dismissed as fanciful the idea that epilepsy was a manifestation of Divine interference. It had been called the sacred disease; but it was, he said, no more Divine than any other form of disorder.

In such early times, when knowledge was confined to the few and when even civilisation was narrowly circumscribed, views similar to those held by the Hippocratic school were unlikely to obtain any wide acceptance. Even those who were capable of understanding his teachings were for the most part too prejudiced to be influenced by them. The links between function and structure had not been discovered. Nor was it possible with the methods then available to demonstrate the nexus between the two. Recourse had to be had to theory in order to explain what took place. The humoral pathology was the result. It might have been true; but, even if it were so, its truth could not be demonstrated. Yet there were adherents of the new learning who strove to carry on the lamp of knowledge. Asclepiades (*circa* 80 B.C.), Themison, Soranus (*circa* 95 A.D.), and Caelius Aurelianus not only maintained the Hippocratic tradition, they substituted the hypothesis of a *vital force*—the excess or defect of which brought about the symptoms described—for the humoral theory. They simplified and made more precise the descriptions of various morbid mental states; and this was also a characteristic feature of the writings of Aretaeus.² In regard to treatment there was an equal advancement.

¹ *Hippocrates*, Sydenham Society's edition.

² “Son plus grand titre de gloire est d'avoir laissé des diverses formes d'aliénation mentale, et notamment de la manie et de la mélancolie, des descriptions

When one reads the teachings of Soranus—as embodied in the writings of Caelius—it seems almost incredible that for about another seventeen hundred years the darkness of ignorance could have prevailed in this respect. Not only does he set forth rules which are to be followed in dealing with the insane as to diet, the necessity of procuring sleep, proper accommodation, and so forth, he deprecates the harsh methods advocated by others, notably by Celsus, who even suggested castigation, chains, and deprivation of food in order to subdue lunatics.¹

This period of enlightenment practically ended with the second century A.D. Galen was the last physician of distinction, then, who carried out the teachings of the Hippocratic school. In his writings we find again that modernism of tone which contrasts so strongly with the almost primitive ignorance of the majority of those who came after him. It was not so much a reactionary movement which overwhelmed the rational teachings of the Greek school but rather that the waves of Greek culture fell back impotently from the rocks of tradition and prejudice which resist at all times by their sheer inertia the impact of new ideas. Yet was this teaching not altogether without avail. Vandalism and bigotry did not succeed entirely in eliminating the writings of those early teachers, and in the course of time they found again pupils who, undeterred by the odium which they ran the risk of incurring, absorbed their doctrines and gradually built a superstructure of modern knowledge upon the foundations therein laid down. It has been well said that “the crowning glory of the Grecian epoch was the recognition once for all that whatever the determining or contributing factors or their manner of operation, *madness is not a manifestation of supernatural power but a disease, and not only a disease, but a disease of the brain; and that physical symptoms commonly accompany the mental ones, both being alike traceable to natural human causes.*”² When we consider the amount of mediævalism which still characterises much present-day writing on matters psychological we cannot sufficiently wonder at the enlightenment of those far-off times. Almost may we say with Browning that—

“Those divine men of old time,
Have reached . . . each at one point
The outside verge that rounds our faculty.”³

d'une exactitude et d'une vérité remarquables,” Régis, *Précis de Psychiatrie* (Paris, 1914), p.8.

¹ It is only just, however, to note that these were not the main methods advocated by Celsus. He also formulated wise and excellent rules for the treatment of the insane.

² “Some Origins in Psychiatry,” by Clarence B. Farrar, *Amer. Journ. of Insanity*, vol. lxiv, No. 3.

³ Cleon.

Progressive medical science was not, of course, confined to Greece and to Rome. Among the Egyptians, for example, a considerable advance was also made, and the thirst for knowledge led them to observe and even to experiment. But culture generally was limited to but a small part of the globe. Beyond that part were the vast masses of the uncultured. Among them it was not possible for the culture of the Greeks to spread until a period of intellectual probation had elapsed. In the first place, they would absorb most readily the simpler ideas of a more primitive culture, such as that of the Jews, tinging them at the same time with the emotional colouring produced by difference of race and of climate. So it came about that rational concepts were stifled, or nearly so, by the supernaturalism of the early Christians, who, be it remembered, were carrying on directly the traditions and the beliefs of the Jews. The New Testament emphasises and reiterates the teachings as to demon-possession. And this possession is not restricted to human beings, as witness the episode of the Gadarene swine. But whereas in the olden time the lunatic might roam comparatively unmolested among the tombs—"wander through the soothing cypress-groves in the moonlight or lie under the shading palm in the noontide heat," now gradually he came to be regarded not so much as one in "the guardianship of God,"¹ but as a miserable sinner, who harboured demons and who required exorcism or more drastic measures to rid him of his affliction. For the mad and for the half-mad, such as many of the witches, the Dark Ages were approaching. Not that they were invariably badly treated. Cures were attempted by means which were not inhumane, but certainly for the more troublesome lunatics there was short shrift. Not even from the science of medicine—such as it was—could they look for much comfort. In this country in Anglo-Saxon times disorders of this kind and, indeed, diseases in general were treated—so far as drugs were concerned—by means of potions of appalling nauseousness.² For centuries the chief criterion of therapeutic potency seems, indeed, to have been the unpleasantness of the compound and, in addition, the number of components, so that a list of the ingredients in a prescription in the olden times resembles nothing so much as the nomenclature of a modern synthetic drug. Even those who had sufficient independence to break away from the accepted beliefs were not able to make any appreciable advance beyond the limits of the Greek school. Chief among these were Alexander of Tralles (A.D. sixth century) and Paulus Ægineta (A.D. seventh century); and the Arabian physicians, Rhazes (A.D. 850-923) and Avicenna (A.D. 980-1037).

¹ *A History of Penal Methods*, by George Ives, p. 77, London, 1914.

² For examples, Oswald Cockayne's interesting volumes in *Leechdoms, Wort-Cunning, and Starcraft* may be referred to, London, 1864.

III.

Throughout the Middle Ages, and, indeed, even until the end of the seventeenth century, belief being for the vast majority of the people fixed, there was little likelihood of any advance. There were, so to say, simply variations on the same tune. The change of view, if any, was rather in the direction of aggrandising the part played by the Devil and of diminishing the influence of the Deity. Instead of the insane being afflicted and, therefore, objects of pity, they were harbourers of demons, perchance even agents of the Devil himself, and, consequently, deserving of treatment by the most drastic means. As belief became more gloomy and as the laws enacted to suppress the crimes of sorcery increased in their rigour, so did the troubles against which legislation was directed become more widespread. Epidemics, such as the dancing mania, afflicted many; and witchcraft increased to an amazing extent, if we are to believe the accounts of the chroniclers of the time.

The amazing thing is not that such beliefs should have obtained so wide an acceptance, but that, once so firmly established, rational thought should ever have been able to dispossess them. It does not appear to be by any conscious effort that such a change is brought about, but rather that, in the course of time, constantly recurring stimuli tend to modify the nervous system in such a way that in the end it becomes able accurately to comprehend what is influencing it, just as, when the sun rises, objects which had appeared shadowy, indistinct, even ghostlike in the gloom, gradually become clearly outlined. So it was that the ideas which characterised the Greek school could not arise among the Northern nations until what has been called the period of intellectual probation had been traversed. This took a matter of some sixteen hundred years.

Towards the end of the sixteenth century several thinkers had come to realise that many of the beliefs then almost universally held were erroneous and pernicious. It was in regard to the witchcraft delusion in particular that an advance began to be made. Men like Reginald Scot, in his *Discoverie of Witchcraft* (1584), and the German physician, John Wier, in his *De Præstigiis Dæmonum* (1563), were among the first to preach a more reasonable doctrine. But theirs were almost voices in the wilderness. The weight of opinion, theological and lay, was against them. Nevertheless, it was a beginning of the rational movement in thought which has gradually dispossessed the cruder superstitions. Yet there have always been men of acute intellect who have championed the cause of superstition; and even down to the present time there appears to be no belief, however illogical or unbased on fact it may be, which need lack advocates. Harvey was bitterly opposed when he promulgated his doctrine: and in these later days

Pasteur had a hard fight ere he won credence for his theories. So the "possession-theory" in regard to the insane maintained its ground even when enlightenment had apparently spread very widely; and even in our own day it is not difficult to find those who uphold this view.

Throughout the seventeenth and most of the eighteenth century there was little amelioration in the condition of the insane; and this state of affairs naturally went along with the theoretical opinions which were still maintained. The need for providing for their accommodation did not become very pressing until with the growth of population there was a considerable increase in the number of insane. The drastic measures adopted against the more troublesome lunatics by the civil powers, and against those unfortunates whose symptoms made them incur the odium of theological opinion, tended to restrict their numbers still further. A good many, however, were allowed to peregrinate the country without let or hindrance: and the wandering "Tom o' Bedlam" was a not uncommon figure. When the time arrived for buildings to be provided for housing the insane it was rather with a view to restricting the movements of the troublesome ones than with any idea of curative treatment. "About the middle of the eighteenth century . . . grim and sombre circumvallate buildings began to be erected¹ for this purpose. They were but prisons of the worst description. Small openings in the walls, unglazed, or, whether glazed or not, guarded with strong iron bars, narrow corridors, dark cells, desolate courts, where no tree nor shrub nor flower nor blade of grass grew. Solitariness, or companionship so indiscriminate as to be worse than solitude; terrible attendants armed with whips . . . and free to impose manacles and chains and stripes at their own brutal will; uncleanness, semi-starvation, the garrotte, and unpunished murders—these were the characteristics of such buildings throughout Europe."² The lot of the wandering lunatic or even that of the others who were cared for privately was for the most part preferable to being immured in such drear and comfortless holds.

It would be unfair, however, to those who were responsible for this state of affairs not to note in passing that the conditions under which the insane lived were more than equalled in their misery and squalor by the habitations provided by the community for criminals. Howard published his *State of the Prisons* in 1780, and even a glance at that epoch-making volume is sufficient to convince any unprejudiced reader of the dreadful callousness exhibited towards the prisoners, and of the insanitary—not to say filthy—manner in which they were lodged. Such things were characteristic of the times; though, even all these things considered, the condition of these unfortunates was no worse

¹ *History of Penal Methods*, Ives, p. 84.

² Conolly, *Treatment of the Insane*, London, 1856.

than that of similar classes on the Continent. Indeed, in France up to the time of the Revolution the state of the honest peasant was, in some districts, little better. Arthur Young speaks, after his journeyings throughout that country, of the "extent and universality of the oppression under which the people groaned"¹; and he found still rampant the blighting effect of tyrannical feudalism.

The reaction against these iniquities was, however, beginning. Contemporaneously in France and in England two men were initiating the movement which has led to the betterment of the condition of the insane. It was during the height of the French Revolution that Pinel was advocating and carrying through his reforms in regard to the treatment of the insane: and in 1793 he achieved his purpose of freeing the patients at Bicêtre from their chains. In England William Tuke, appalled by the condition of things in the York Asylum, determined to found a home for the insane where they would be treated with humanity. The result was the "Retreat," the building of which was started in the year 1792.² Although amelioration may be said to have been continuous from this time onwards in certain places, it was long before it became generalised. In an official Report published in 1815, it is made evident that even in London itself the condition of the insane was almost incredibly bad.³ Bethlem Hospital was, according to the evidence published in that report, one of the worst offenders; and if this could be so in London itself, where inspection and supervision might be carried out with some degree of thoroughness, it is easy to imagine the state of affairs in the provinces. On the other hand, it is to be noted that the fresh impetus which was about to be given to the movement for the more humane treatment of the insane came from a provincial town.

By the year 1838 Dr. Gardiner Hill had gradually introduced the system of non-restraint into the Lincoln Asylum; and, only a little later, Conolly brought about a similar improvement at Hanwell. They demonstrated that those measures were practicable which many other men looked upon as Utopian: and experience has tended to justify their wisdom and humanity. Yet there were not a few who continued to oppose these methods; and there are still some people who look upon Hill's suggestions as counsels of perfection. But in the main the

¹ *Travels in France during the Years 1787, 1788, 1789* ("On the Revolution in France"), by Arthur Young.

² "La tentative de Pinel ne fut pas isolée. Au même moment des efforts analogues s'opéraient sur d'autres points. Déjà Daquin, en Savoie, avait prêché la même doctrine humanitaire dans une sphère plus modeste, tandis que Chiavari, en Italie, publiait, en 1794, son *Traité de la folie en général et dans l'espèce*, où il consignait les résultats des améliorations obtenues par lui à Florence," Regis, *Précis de Psychiatrie*, p. 17.

³ *Report and Minutes of Evidence on the Madhouses of England*, London, 1815,

followers of Hill and Conolly dominate opinion at the present time. The inherent brutality of mankind—so strikingly exemplified in recent times—does not, however, readily give up repressive measures; and for a while after the Hill-Conolly epoch the strictures contained in such books as *Hard Cash* received justification. Such measures have become nowadays the exception instead of being the rule; and instead of being countenanced, they are discouraged not only by law but, what is perhaps more important, they are strongly deprecated by general opinion.

IV.

All this is a substantial advance, and for the immediate well-being of the insane population it is of paramount importance. But there has gone along with this a movement in scientific thought which is of even greater value. In the words of one of the reformers in the treatment of the insane: "Derangement is no longer considered a disease of the understanding, but of the centre of the nervous system, upon the unimpaired condition of which the exercise of the understanding depends. The brain is at fault and not the mind."¹ That is, quite succinctly, the opinion which, in spite of more or less fantastic reactions towards the metaphysical speculations which have so long been predominant, is steadily becoming more and more widely received. Enunciated by Hippocrates it was yet too sane and rational to find acceptance during later ages when nescience and mysticism prevailed, and when the improbability of a doctrine was all the more cogent reason for believing in it. This doctrine is, however, merely a restatement of the Hippocratic dogma; and if it rested on no more experiential basis than it did in his day it would be as difficult to meet the objections of the cavillers at the present time as it was then. Even though the number of those who have studied the minute structure of the brain and the localisation of function in different areas is comparatively small, yet the results obtained have given invaluable support to the theory that *mind* is merely the name applied to the functioning of certain parts of the nervous system. Every year brings fresh evidence to prove that the dictum, "no brain, no mind," is true beyond all dispute.² Physiologically and pathologically the results point in the same direction. It is not to be expected, however, that the majority of people will readily become converted to such a belief. It has not, superficially, the picturesqueness of the theory that the mind is a vague something which

¹ W. A. F. Brown, *What Asylums were, are, and ought to be*, p. 4, Edinburgh, 1837.

² "Indeed, it is impossible to conceive how any mental action, however subtle, can occur without a corresponding change in the brain-cells." *The Origin and Nature of the Emotions*, by Geo. W. Crile, p. 121.

plays like a will-o'-the-wisp¹ somewhere in space and therefrom descends upon the individual to whom it has been allotted ; nor does it make any appeal to the mystical and emotional. But to those who have to deal practically with minds in disorder it is an inspiration to further effort and research. When we realise that these morbid conditions are due to disease or disorder of the nervous substratum we can at once direct our attention to finding out where the trouble lies, and, if possible, rectifying the disorder or curing the disease.

It is not infrequently said that the results of all the work done towards ameliorating the condition of the insane and in other lines of treatment has made little difference in the recovery rate. Those who make such statements would do well to remember that psychiatry as a scientific subject is practically in its infancy. It is only in very recent times—as has been pointed out—that even a beginning has been made. When the overwhelming importance of the subject is considered, the number of those who have undertaken research and investigation is very small in comparison with those occupied with medicine in general. Various factors have conduced to this undesirable state of affairs. There can be no doubt that many have been deterred by the belief that insanity is a condition in which any hope of therapeutic success is illusory. They have felt that in diseases of the chest or the eyes, for example, certain structures are affected, and that the morbid condition may, therefore, be attacked. But in regard to insanity, there is simply the intangible “something” which does not respond to any of the ordinary methods of treatment. Even now, when those engaged in the study of psychiatry are beginning to realise that this is not so, there still remains this lingering belief in the public mind ; and fresh strength is given to that belief by the various reactionary movements which arise from time to time, and which, aided by newly-coined terminology, obscure the issue. We look back to the time of Harvey and contemplate with amusement the theories of his opponents with their “vital spirits” and similar refuges of ignorance ; but how many are there nowadays who hold practically a precisely similar belief in the matter of mental processes ? They have retired with their “vital spirits” to the last citadel—the “mind,”—and there defend themselves with all the valour of enthusiasm rather than of reason. But the researches into such a condition as, for example, general paralysis of the insane, have done more to undermine their defences than any amount of theory could possibly do. In it the assumption that a definite causal factor would be found has been justified ; and when Noguchi discovered the spirochæte of syphilis in the brains of patients suffering from this disease a shrewd blow was

¹ Even the will-o'-the-wisp is less nebulous than the metaphysical *mind*. It might be better to call it the Nothingness—using, of course, the capit which gives an appearance of reality without necessitating any further explanation.

given to what may be designated the "vital-spirit" school. Here was a condition in which was seen a wonderful variety of mental symptoms, yet these were brought about by the influence of the syphilitic organism or its virus on the brain-cells! Surely, the inference is justifiable that in other forms of mental disorder there may be some organism at work, or the derangement may be due to some other physical factor which disorganises temporarily or permanently the functions of the nerve-cells. In any case, an impetus has been given to further research along the same lines; for, from the practical point of view, more has been achieved by such a discovery as this than by all the windy verbiage in which the subject has been obscured.

If, as is not unlikely, some of the therapeutic methods which are being directed against the causal factor in general paralysis of the insane prove to be successful, the death-rate in insanity generally will be speedily reduced, for this condition is responsible annually for quite a large proportion of the total deaths among the insane. Glandular treatment—or opotherapy—is likely to be extended; and the results obtained by the administration of thyroid substance already warrant hopefulness in that direction. The introduction of artificial feeding by means of the nasal or of the œsophageal tube has saved many lives that would have otherwise been lost. Further developments in the treatment of epilepsy may be confidently expected; even now the bromides have proved of undoubted efficacy in this disorder. Balneotherapy—an ancient usage—has been employed more extensively. The open-air treatment of insanity has given beneficial results. Electricity in various forms is now made use of. New hypnotic and sedative drugs have proved of utility in many cases. Treatment by suggestion has given rise to good results in certain forms of mental disorder, according to some observers; and the same may be said of the psycho-analytic method associated with the name of Freud—though there is still much discrepancy of opinion in regard to this.¹ The nursing of the insane has been improved. Those who take charge of them have to undergo special training; and the general change which has taken place in the attitude adopted by the public towards the insane is reflected in those who occupy this important position in relation to the mentally disordered.²

¹ "From hysteria psycho-analysis was applied to other groups of psychoneurotic disorders, first to morbid obsessions and impulsions, then to all sorts of psychic disorders, including various forms of insanity, though it may be doubted whether it has worked out as well in any of them as in hysteria, and in the severe forms of mental disease, as Freud himself has pointed out, it is helpless." Havelock Ellis, *Journ. of Mental Science*, October, 1917, p. 542.

² The nursing of male patients by women has been successfully adopted in a number of asylums; and there can be little doubt but that an even more extensive use will be made of their services, especially in view of the exigencies of the present time.

Pathological and physiological research have advanced our knowledge of the structure and function of the nervous system very greatly. This is particularly so in the matter of microscopic investigation, where higher-power lenses have made it possible to see intimate details and changes which were before only inferential. Experimentally it has been "proved conclusively that whether we call a person fatigued or diseased, the brain-cells undergo physical deterioration accompanied by loss of mental power. Even to the minutest detail we can show a direct relationship between the physical state of the brain-cells and the mental power of the individual—that is, the physical power of a person goes *pari passu* with his mental power."¹ Many others have come to the same conclusion, and it may safely be anticipated that further investigation will confirm and amplify the results already arrived at. The finding of micro-organisms in the brain—as, for example, in general paralysis of the insane—has been rendered possible by the use of the modern methods of investigation, and the discovery of other noxious organisms may throw light on the hitherto obscure ætiology of certain mental disorders.

Pathological findings and the observation of the symptoms and progress of cases have made it possible to classify more accurately the various forms of mental disorder. In this respect the suggestions put forward by Kraepelin have had much influence. But the more the subject is investigated, the more difficult is it found to adopt at present any one of the classifications already promulgated. The differentiation of mental disorders which has already been achieved warrants, however, the hope that in this direction also a further advance may be made.

V.

The theory of evolution has gradually been found to be of wider and wider application, and in regard to mental processes, and, consequently, of mental disorders, it has immensely assisted in bringing about enlightenment. Darwin, Wallace, Spencer—but, in the matter of mental evolution, Spencer in particular—have initiated a movement which has steadily progressed since their time. It has done very much towards undermining the belief in a mind apart from organisation. Their theories are being carried to a logical conclusion which, it is true, they may not have anticipated; but it appears to be inevitable that all those who look at the matter broadly will, in the end, come to see that mental processes show a progressive complication which goes along with increasing complexity of organisation. The work of Huxley, of Romanes, and of Haeckel—to mention no others—has helped to make this clear in regard to normal mental processes and from the integrative

¹ *The Origin and Nature of the Emotions*, by G. W. Crile, p. 121.

point of view.¹ But just as confirmation is obtained from such an inductive method, so from the consideration of disintegration of the nervous system support is also obtained. In this case along with deterioration in nerve-cell structure there is diminution of mentality.² Although various more or less specious arguments are advanced in opposition to this, it tends to be more and more strongly confirmed by observation; and if more exact methods of testing mental capacity were utilised, the truth of this statement would speedily become more evident. No one has done more to illustrate this and to simplify the evolutionary doctrine in its bearings on nervous processes from the disintegrative as well as from the integrative point of view than Dr. Henry Maudsley. His *Physiology and Pathology of Mind* (1862) may well be looked upon as constituting an epoch in the study of psychology as well as of psychiatry. For the first time he dealt comprehensively with the subject from the devolutionary as well as from the evolutionary aspect. Nor must the splendid contributions to research in nervous disorder made by Hughlings Jackson be forgotten; and, perhaps most noteworthy of all his conclusions, the statement that the most highly evolved parts of the nervous system are the least organised, and, therefore, that in processes of dissolution they most readily break down. Also his researches in regard to epilepsy and convulsions, and his theory that, in nervous disease, it is the uninhibited function of the portions of the nervous system not yet attacked by the disease which give rise to symptoms.

Evolution in regard to the nervous system is shown to be from the simple to the complex, and there is at the same time a tendency towards differentiation and specialisation; that is, although it works as a whole, yet in different parts special functions are carried on. This is obviously so in regard to certain portions, such as the autonomic system; and the researches of, for example, Ferrier, Broca, Horsley, and Schäfer, have demonstrated that this holds good for the brain also—at least, in respect of certain areas. The inference is fair that further investigation will show that this process of specialisation has gone still further, and it will be seen that the “silent” areas of the brain have definite functions to fulfil.

Support for the evolutionary doctrine and for the theory of increasing specialisation has been derived from the study of prehistoric man and of living savage races. Progression from the simple to the complex has taken place phylogenetically as well as ontogenetically—in the race as in the individual. A narrow outlook has appeared to negative this by

¹ A clear and succinct account of mental evolution is to be found in *The Evolution of Mind* by Joseph McCabe (London, 1910).

² “Loss of the higher mental functions invariably accompanies the cell deterioration.” *The Origin and Nature of the Emotions*, by Geo. W. Crile, p. 125.

pointing to the waxing and waning of different races ; but when a wider view is taken, these vicissitudes are seen to be but as the advancing and receding waves of an incoming tide.¹ The investigations of Tylor² and of many others show that certain simple ideas characterise the thinking of primitive races, and that with increasing sociological complexity there is an ever-widening intellectuality. On the theory that mind is a thing apart from organisation and uninfluenced by it, such progressive intellectual differentiation is difficult to understand.

The intimate connection between criminality and insanity has become more apparent of recent years. Therein also we may see an advance and an improvement. It is now admitted by all who are competent to judge that there are certain individuals whose mental defect precludes them from observing satisfactorily the ordinary code of rules whereby society protects itself from its anti-social members. These defectives are of so poor cerebral organisation that education is ineffective to raise them to such a standard of conduct as will fit them to take their place as useful citizens. The irresponsibility of the definitely insane has been admitted from the legal point of view ; but in regard to the mental defectives—especially those with moral defects—the matter is difficult, and opinion is, therefore, variable. It is beginning to be realised that many who are apparently sane and responsible are yet not so ; and, accordingly, the inutility and wastefulness of ordinary methods of dealing with them is slowly becoming obvious. The application of scientific tests of mental capability is replacing the haphazard method which has been so common. It is being realised, also, that it is essential that the prison medical officer should have a competent knowledge of mental disorders, so that he may recognise some of the less obvious troubles than “melancholy madness,” or “raving madness.”

The effects of the changes of opinion are already obvious. More discrimination is being exercised in dealing with individual cases : and in time as the community comes to understand *its* responsibility in regard to the nurture of those whom social conditions have placed in evil surroundings a still greater advance may be looked for. The old illusion of the freedom of the will is not now so readily accepted as one of the eternal verities. It is realised that there is a balancing of motives and that the scale may be turned by adding to the weight of one or other of these. Aggression or punishment of a vindictive nature tend to arouse violent opposition or hatred ; consequently they have

¹ Whether there will or will not be an eventual reflux involving the whole of mankind does not appear to affect the statement that generally there *has* been an advance.

² *Primitive Culture*, 1871. There has been much useful work done also in regard to social psychology, as, for example, by G. le Bon, *The Crowd*, and *The Psychology of Revolution*, and by McDougall, *Social Psychology*.

failed to produce reformation or cure in the criminal or in the insane, and they have almost entirely been discarded. The benefit has been more widespread than is usually imagined. It has shown itself not only in the condition of prisoners and of the insane, but also in those who have charge of them: for brutality has an evil and degrading effect on those who practise it as well as on those who suffer by it.

In this connection the work of Lombroso, in particular, has been of value. However much his theories may be criticised—and there seems to be no doubt that he allowed his hypotheses too great a scope—he has done much to arouse scientific interest in the criminal and the defective. His investigations and those of other criminologists tend to confirm the dictum enunciated by Sir Matthew Hale in the seventeenth century that “most persons that are felons . . . are under a degree of partial insanity when they commit these offences.” It is early yet to speak dogmatically on a subject to which attention has been directed only in recent times and that, too, by comparatively few who have had adequate knowledge both of criminals and of the insane. We may hope, however, that the time will soon come “when those morbid mental processes which eventuate in anti-social acts will be made an object of psychiatric attention.”¹

Another problem which has come under consideration and in which it has been difficult to say definitely how much is due to moral defect is that of sexual perversion. Where, however, formerly it was sufficient to place such offenders under the ban of the *odium theologicum* it is now realised that the matter cannot be so easily disposed of. It is seen, too, that this subject exhibits many aspects each of which requires careful study. It remains for the future to discuss these questions fully and frankly. Up to the present it has not been realised that—scientifically considered—nothing is unclean and that everything in regard to which we are in doubt has to be looked upon as a subject for investigation. The difficulty has been—and probably for a long time will be—to separate the scientific from the pornographic. It is something, however, that a beginning has been made; and the writings of von Krafft-Ebing,² Havelock Ellis,³ Bloch,⁴ and others have already thrown much light upon an abstruse and difficult problem.

The application of the knowledge of morbid mental states to historical and to literary subjects has helped towards a more complete understanding of much that was obscure. It has been shown how the conduct of, for example, certain of the Roman Emperors was the result of their mental unsoundness; how certain religious movements have been

¹ *The Causes and Cure of Crime*, by T. S. Mosby, p. 68, London, 1914.

² *Psychopathia Sexualis*.

³ *The Psychology of Sex*.

⁴ *The Sexual Life of Our Times*.

initiated by men and women who were influenced by hallucinations and delusions; and how, in literature and in art, much has been the product of morbid mental states. The effects of certain bodily disorders in producing irritability, cruelty, and even violence in ordinary domestic life are understood by most people; but it has not been realised to anything like the same extent that similar disorders occurring in men of eminence have in certain instances altered the course of history. From this point of view there remains very much still to be done; and the studies made, *e.g.*, by Ireland, Maudsley, Cabanès,¹ show that much may be anticipated from further investigations along these lines.

There is another aspect of the matter which may, however, be again adverted to, namely, the financial one. In these days when economic conditions have become less favourable to living the studious life, it is necessary to take more earnest thought as to the means of subsistence. Nor is it merely the question of a bare livelihood. Even the man who is drawn towards scientific research is not necessarily inhuman, and he may be deflected from the path which he had set out to tread by the need of providing adequate means for the support of his family. He knows very well that he cannot expect even moderate success from the financial point of view if he devotes his time to research, so, unless he is an enthusiast who is willing to sacrifice everything to his work, he turns his attention to a more lucrative branch of the profession.² Nowhere is this more to be noted than in regard to cerebral research. In the ordinary way when it is desired to obtain the services of competent workers it is realised that adequate remuneration must be offered. It is sound business; and from the financial point of view it pays. It is admitted that there has been no stint in the matter of expenditure in erecting asylums. How much has been set aside, however, to provide for research? And in how many cases have arrangements been made to have an adequately paid pathologist attached to even the large asylums? It is practically left to individual effort; and even then there is little encouragement given. Nor do asylum appointments attract the best men. It is true that conditions have somewhat improved of late years, yet much remains to be done. Until this is rectified it is somewhat unreasonable to complain that, though there is an immense field for research, so little of practical value emanates from the medical officers whose lives are given up to the care and treatment of the insane.

¹ W. W. Ireland, *The Blot on the Brain, Through the Ivory Gate*; Henry Maudsley, *Natural Causes and Supernatural Seemings, Body and Mind*; Cabanès, *Cabinet Secret de l'Histoire, La Névrose Révolutionnaire*, etc.

² There are, it is true, certain positions which would satisfy all but the most exacting. The fewness of these only serves, however, to justify the present contention.

There are those who will say that the association of scientific research with financial considerations is a sordid one. It is a comfortable doctrine for those whose means of support are ample and also for the taxpayer¹; but, as economic conditions become more stringent and as the task of gaining the daily bread is, therefore, almost sufficient to absorb the ordinary man's energies, it is being more and more clearly realised that the labourer is worthy of his hire, and, what is more important, that he is not going to be deprived of it. Charity at the expense of others is too simple a matter to have failed to be exploited in science as elsewhere.

PROPHYLAXIS.

As much insanity is due to congenital defect or to the breaking down of inherently unstable nervous organisations, curative measures in certain cases are likely to prove inefficacious. Obviously, cure can be looked for only in those cases where there is temporary interference with nerve-cell structure, and where, prior to the attack, the brain has been sufficient for the ordinary demands. Just as in the ascending scale the brain of the imbecile cannot be brought by any form of education to such a stage of efficiency as will enable the individual to become an average member of society, so, when definite deterioration has taken place, it is impossible to rehabilitate the brain-cells. It becomes necessary, therefore, to prevent, if possible, an undue strain being thrown upon the unstable brain. For example, the child with inherited instability may be apparently above the average intelligence during school life. This being so, the intensive methods still too prevalent in educational systems are brought to bear upon the child with the result that the brain breaks down, and, it may be, primary dementia is initiated. It may be said that a person so unstable is likely to be of little use in life, but this is by no means proved. Certain cases which have come early under care and which appear to exhibit undoubtedly the symptoms of primary dementia, yet recover apparently completely. In the same way with other forms of insanity, attention to the early symptoms and the application of therapeutic measures may preclude a more acute attack with its possible issue in permanent enfeeblement. It is the prolongation of the period during which the morbid stimuli act which brings about such deterioration that the brain-cells are unable to recover; and the length of time required to bring about disintegration will naturally vary in different individuals, depending on their

¹ "Stretched in his marble palace, at his ease,
Lucan may write, and only ask to please;
But what is this, if this be all you give,
To Bassus and Serranus? They must live."

Juvenal, Satire VI (Gifford's Translation).

powers of resistance. In the mental defective this resistance is so slight that he is unable to withstand even the ordinary stress entailed by social life, and he is therefore unable to conform to the rules which the community has laid down.

These matters are being taken into consideration and some advance has already been made. The Mental Deficiency Act has for its object the segregation of those defectives who are anti-social in their conduct, and who are likely to become—if no let or hindrance is interposed—the parents of criminals and of lunatics. Punitive measures are simply energy misspent. Sterilisation is a method by no means beyond criticism; and, indeed, any form of treatment which tends to link the medical man with the executioner starts with an initial disadvantage.

Attempts are being made to bring the patient in the incipient stages of an attack of mental disorder earlier under treatment. The out-patient system adopted at certain hospitals is a step in this direction, but can only be of value to a limited extent unless arrangements are also made for in-patient treatment where this is necessary. The question of certification will probably have to be discussed anew and a somewhat wider latitude granted, especially where it is certain that proper care and supervision will be provided. The exigencies of the present time have done much to show that a less rigid system than the present one in regard to early certification is within the bounds of possibility. It was realised that some injustice would be done to soldiers who had broken down mentally on account of the stress of war conditions if they were straightway certified; and special hospital accommodation was provided for these men with the result that many who would have been certified under ordinary conditions have not required certification. If this holds good for them, then, surely, those who have broken down under the stresses of ordinary social life—often far from inconsiderable—may justly claim some such exemption.¹ The objection to certification may be entirely sentimental and it may in time be overcome. In the meantime, Draconian edicts arouse irritation; and in such a case as this, unless it can be shown that dangers to the community or to the individual are likely to arise, compromise is indicated.

It is also necessary to induce the public to realise that the function of the alienist is not chiefly in bringing about the segregation of the patient—an idea unfortunately too prevalent—but in advising or directing treatment as is done in other branches of the medical profession.

¹ The munificent gift made by Dr. Henry Maudsley, which has resulted in the building of the hospital which bears his name, may be noted as a very practical attempt to satisfy this need.

Generally, a more comprehensive outlook in regard to the possibilities in psychiatry is needful—even among alienists themselves. In the words of a recent writer, "This wider field of activity for the greater psychiatry includes not only the recognised problems of insanity, feeble-mindedness, and psychiatric states in general, but a large group of phenomena, mostly social in their bearings, such as delinquency, inebriety, prostitution, and various phases of delinquency and social failure."¹

SUMMARY.

Even this brief survey may have sufficed to make it evident that in regard to mental disease there has in recent times been a definite advance in regard to the general attitude adopted towards the insane; and this has resulted in a steady amelioration of their lot. Although a retrogression took place after the classical period of Hippocrates and Pythagoras this in turn was succeeded by the more enlightened epoch initiated by Pinel and Tuke towards the latter part of the eighteenth century. The progress of rationalism has tended to displace the metaphysical conceptions which, assuming an extraneous mind, made it easy to postulate the influence of other extra-natural influences. From the sixteenth century onwards belief in demon-possession has steadily waned; and along with this there has been a diminution in credulity in regard to witchcraft and magic. The evolutionary doctrine has been applied to nervous processes; and it has been seen that there is uninterrupted progression from simple nervous reactions up to the more complete reflexes which result in mind. The tendency towards differentiation and the allocation of specific function to separate areas—already noted in regard to the body in general—is seen to hold good of the nervous system. Increasing complexity of social organisation has been demonstrated by anthropological research. The study of the relationship between insanity and criminality has made considerable progress. Sexual anomalies and perversions are being scientifically investigated. Results obtained from the study of morbid psychology are being made use of to explain difficult problems in history. The secretions of the ductless glands have received much attention, and already the therapeutic results are such as to warrant the belief that even more may be expected from that direction. Physiological and pathological research have already yielded valuable results; and the knowledge thus gained has tended to substantiate the assertion that mental function is utterly dependent upon the condition of the organic substratum. It is becoming possible to some extent to differ-

¹ "The Broader Psychology and the War," by Herman M. Adler, M.D (*Mental Hygiene*, July, 1917, p. 364.)

entiate between varieties of mental disorder; and this should proceed even further when the methods of pathological investigation are more able to reveal subtle changes. The discovery of the ætiological factor in general paralysis of the insane has stimulated therapeutic effort towards counteracting that dire disease. The prophylaxis of insanity is yet in its early stages, but it is reasonable to expect that still more beneficial results may be looked for.

Occasional Note.

Early Treatment of Mental Disorders.

THE question of how best to secure early treatment for sufferers from mental derangement has long engaged the attention of the medical profession. It will not therefore, we premise, be out of place to scrutinise some of the more recent pronouncements on this subject. And we could not probably find a more appropriate text for discussion in this connection than the little volume on *Shell-Shock* by Profs. Elliot-Smith and Pear, a second edition of which has lately appeared, the first having been rapidly exhausted. We welcome this fact as showing that more or less general interest in this most vital and important subject is being aroused, and we hope the demand will continue, although, as will be seen, we have perused its contents with somewhat mingled feelings, especially when taken in connection with an address delivered, since the publication of the book, by Prof. Elliot-Smith at the Royal Institution for Public Health.

The chief aim of the authors is to show that the early treatment of mental disorders is an urgent public need. There can be little doubt that this account of the treatment of shell-shock under stress of war conditions will go far to convince all who read it that similar provision is required by civilians.

In July, 1914, less than a fortnight before the catastrophe of the war, the Report of the Committee *re* Status of British Psychiatry was adopted at the annual meeting of the Medico-Psychological Association at Norwich. The foremost recommendation in this report was the establishment of psychiatric clinics. Therein it is stated: "The evidence of many authorities, who have practical experience of the value of treatment in the incipient stages of the illness, is conclusive that the exercise of scientific care during the early phases of the mental disorder would save many from such a complete breakdown as would necessitate certification and removal to an asylum . . . and therefore the Committee regard it as essential that, in the large centres of the population, at any rate, means should be provided to obviate the delay which now exists in securing adequate treatment for mental disorders."

This book on shell-shock is written in support of this long-needed reform. We read, p. 128: "For the relief of the mentally afflicted amongst us, and especially for the prevention of insanity, it is our bounden duty as a nation to take measures such as most civilised countries have adopted long ago. For this purpose it is necessary that there should be hospitals to which patients in the early stages of mental disturbance can go, without any legal formalities, and receive proper treatment from physicians competent to diagnose their troubles and to give them appropriate advice."

It is interesting to observe that the authors of this volume are neither of them alienists or neurologists. Prof. Elliot-Smith is one of the ablest and best-known anatomists of our time, and Prof. Pear is a distinguished psychologist. But for the war, and the establishment of the military hospital for functional nervous disorders at Maghull, near Liverpool, it is doubtful whether this book would have been written. We note with pleasure that it is dedicated to Major Rows (now Lieut.-Col.), whose work at Maghull has been so strikingly successful.

As our readers are aware, Col. Rows was the indefatigable Secretary of the Status Committee referred to, and it is a source of great satisfaction that in his present important position he has the opportunity for carrying out some of the ideas he has had so long in mind. For there is at last in being a "centre for teaching in which systematic instruction" is given, accompanied by "facilities for post-graduate studies," and where the army medical officer, at any rate, has "the advantage of working in a scientific atmosphere in an institution where he can see treatment on the most modern lines, and where he can be assisted and guided by men who have done and continue to do their share in investigating the obscure questions connected with this science." (We quote from the Report of the Status Committee.)

Although the volume before us says hard things in reference to existing institutions for the insane, we must admit that much of this is, as the authors themselves state, but a paraphrase of the Status Committee's Report. We may instance: "The most depressing aspect of the present state of affairs is *the comparative absence of all research*" (p. 117). "Nor, as yet, have many of the medical officers in our asylums sufficient up-to-date knowledge of psychiatry to enable them usefully to co-operate with medical schools and the teaching staffs of the general hospitals." Moreover, the implication in the introduction (p. xv) is not pleasant reading: "The war has forced upon this country a rational and humane method of caring for and treating mental disorders among its soldiers. Are these signs of progress merely temporary? Are such successful measures to be limited for the duration of the war and to be restricted to the Army?"

Most of us say things about ourselves and our shortcomings that we

are apt to resent if said by anyone else. It is, therefore, not surprising that criticism has been directed to this book in that it seems to do less than justice to the devoted service of asylum workers throughout the country, work frequently carried out under the most difficult conditions. A careful study of the text makes it clear that the authors are not criticising the treatment of declared insanity so much as the system which provides little or no treatment for persons on the verge of a mental breakdown. They sum up the defects as follows: "First and foremost is the serious waste of time which almost invariably occurs before the mental sufferer comes under medical care. This is due to a variety of causes—all of them preventable. The chief is that, lying in the path of patients who would *voluntarily* seek help, there is the insurmountable obstacle of the asylum service and its restrictions. The men in the asylum service, who have the opportunity of acquiring an intimate knowledge of mental diseases, are *forbidden* to carry that knowledge into the outside world for the benefit of the mental sufferer. If a patient, suffering from a mental disorder in its earliest and easily curable stage, should voluntarily go to an asylum and ask advice, all that can be done for him is to suggest that he should consult a medical man outside or to recommend him to call and see the relieving officer. . . . In short, all that the officials under our present system can say to such a man is: 'Go away and get very much worse, and then we shall be allowed to look after you!'" This criticism cannot be said to be unfair, though the assumption that the early stages of mental disorder are easily curable is, perhaps, over sanguine.

Although there is little in the book to which exception can be taken, the public addresses of one of the authors appear to go further, and may injure a good cause by over-statement.

The *Manchester Guardian* has reported an address delivered recently by Prof. Elliot-Smith at the Royal Institute for Public Health which contains statements that seem to us exaggerated and deplorable. After speaking of Conolly removing the iron fetters of Hanwell, the report proceeds: "To-day the forces of ignorance and apathy were responsible for the perpetuation of the vicious system which unnecessarily inflicted upon thousands of English men and women every year the more galling fetters of the asylum label and the stigma of madness. Probably 50 *per cent.* of the patients admitted to British asylums to-day would have been spared this ignominy . . . if we had done as many other nations had done long ago—*i.e.*, provided facilities for the skilled treatment of mental disorders in their early and curable stage, and so spared nearly 50 *per cent.* of such patients the fate of being branded as madmen and being sent to an asylum."

Making allowance for the condensation of a newspaper report, we must take serious exception to two of the statements made. First, the

implication that it is ignominious to be sent to a hospital for the insane for treatment. Second, that 50 *per cent.* of the patients would be saved from the stigma of madness by treatment in a special hospital.

Surely Prof. Elliot-Smith must know that however successful the special hospitals may be, a large number of patients cannot be treated to recovery in them, and will have to be transferred to a hospital for the insane. And surely, it is cruel and reactionary in the extreme to reproach the more grave cases with the "stigma of madness," and to imply that they are something essentially different from those who happen to recover quickly. The Medico-Psychological Association has striven, since its foundation, to remove the reproach of lunacy, and we cannot but regret to see it being emphasised in order to help forward a needful reform in treatment. The assertion that 50 *per cent.*, or nearly 50 *per cent.*, will escape the fate of "being branded as madmen," when considered in relation to the context, evidently means that declared insanity will be prevented in half the cases. This is surely too sanguine a view, and there are certainly no statistics available to justify so sweeping a statement. We must not forget that it is the disease itself which is serious, not what it is called, nor where it happens to be treated.

The cause we have at heart cannot be advanced by statements which must tend to create prejudice against institutions doing necessary and most valuable work for the community, or by exaggerating the benefits likely to be secured by reform. We are glad, however, that men eminent in other branches of knowledge are joining hands with us in the endeavour to promote improved methods of treating mental illness in its early stages.

While we recognise the limitations of some of the supporters of this good cause, who have not specially devoted themselves to the treatment of mental disorders, we venture to plead that future advocacy may be free from reprehensible terms which betray a sad lack of sympathetic appreciation of the feelings of the sufferers and of their friends.

Part II.—Reviews.

Automatisme et Suggestion. Par H. BERNHEIM. Paris: Alcan, 1917.
Pp. 168. Price 2 frs. 50.

The problems of hypnotism will seem to many to-day to be ancient history. Forty years ago, however, exactly the same storm raged around hypnotism as now rages round psycho-analysis. On the one hand were the enthusiastic champions of what seemed to them a newly-discovered force full of immense possibilities; on the other hand were the adversaries who could find no language strong enough to express

their condemnation. The storm has long since subsided. Neither the champions nor their adversaries triumphed. Hypnotism and suggestibility were accepted, but in that acceptance they fell back into a position which, though assured, was seen to be quite humble and modest.

The veteran Prof. Bernheim, of Nancy, played a large part in the settlement of these questions. By no means a man of brilliant genius but endowed with a calm, common-sense, observant mind, he carefully watched the pioneering experiments of Liébault and came to certain conclusions. He was able to explain the phenomena as simply due to suggestion, and he found reason to believe that the elaborate results obtained by Charcot and others were in large degree artificially built up by unconscious suggestion working on hysterical subjects. From these conclusions he has never deviated.

In the present simply written little book his familiar results are presented afresh with such slight new developments as he has since worked out. Some of the views and definitions thus brought forward will be regarded as personal to himself, but there is usually something to be said for them. The book throughout shows that clear, calm vision and unfailing sobriety of judgment which has always characterised the author.

Bernheim refuses to believe that under the influence of hypnotism or suggestion the subject is purely automatic, an unconscious machine, acted upon by another's will. The early chapters of the volume are devoted to expounding the conception of automatism in this sense as a mechanism, itself indeed unconscious, but in a conscious subject. Formerly, like Liébault, Bernheim believed that the phenomena of hypnotism were the more pronounced the more complete the hypnotic sleep; the suggestibility seemed to be in proportion to the depth of the sleep. Now, observation and reflection have led him to modify, and even reverse, that view. The suggestibility created in this sleep is not proportional to its depth, but, on the contrary, all its phenomena are due to conscious psychic conditions (falsifiable by suggestion but not abolished) which have no existence in deep sleep. Through all stages of this condition the same tendencies hold good. Catalepsy is simply a phenomenon of suggestion, and suggestion is a phenomenon of consciousness; suggestion can produce in the ordinary waking state the same manifestations (anæsthesia, hallucinations, obedience to commanded acts, etc.) as in the induced sleep. Thus it is that Bernheim concludes with Delboeuf: "There is no hypnotism, there is only suggestibility."

It is in accordance with this standpoint that Bernheim insists throughout that the phenomena we are here concerned with are never absolute. Suggestion does not imply complete automatic obedience. Amnesia is neither constant nor absolute. The subject's memories of his somnambulistic state are latent, not effaced. Bernheim is quite unable to accept Grasset's well-known conception of the polygon of lower centres, emancipated from the higher centres, and obedient to the hypnotiser. On the other hand, there is a certain amount of suggestion and ideodynamism in all our everyday acts. That is our determinism. To a large extent we are all influenced, even without knowing it, by the passions and prejudices of the mob. *Vox populi, vox Diaboli.* Hence

the importance of education in the prophylaxis of morbid suggestions, and the need to combat the credulity of childhood by developing the reasoning powers.

A chapter is devoted to the question of moral responsibility. Bernheim holds that psychologically there is no *absolute* free-will, and, consequently, no *absolute* moral responsibility. But there is always a legal responsibility, and all injurious acts must be repressed without regard to the question of moral responsibility. It is not a question of punishment but of social defence, and often also of salutary suggestion. But, it is added, we must remember that the convictions thus rendered necessary are not for the purpose of casting infamy on the culprit and his family, but simply to safeguard society.

In a subsequent chapter an attempt is made to define the terms "neurosis" and "psycho-neurosis." Bernheim refuses to regard neurasthenia as a neurosis. It is not a neurosis but a morbid constitutional evolution, doubtless due to some toxic principle in the organism. At the outset of his career, believing, as was generally believed, that neurasthenia is purely functional, he applied psycho-therapeutic treatment, but without effect.

A functional trouble must not be regarded as a neurosis unless its evolution shows absence of organic processes. A psychic neurosis (neurosis constituted by psychic trouble) becomes a "psycho-neurosis" or, the emotional cause having disappeared, it is maintained through the psychic activities alone by mental representation. A psycho-neurosis alone furnishes the basis on which psycho-therapeutics can act. This leads on to certain differentiating considerations on hysteria. Medically speaking, the term "hysteria," Bernheim considers, should only be applied to the well-known nervous crises. It should not be applied to the large number of women of so-called "hysterical character" who really have no such crises at all, while the women with true hysteria usually do not possess the "hysterical character," but may be entirely sound in their ideas and feelings and of high character. Other psycho-neuroses than the nervous crises should also not be regarded as hysteria; thus hemianæsthesia is not to be reckoned among hysterical symptoms, though it may easily be produced by suggestion whether or not hysteria is present.

A final chapter is devoted to treatment. It was Liébault who initiated verbal suggestion in treatment; but he first put the patient to sleep. It was Bernheim who, in 1884, showed that the preliminary sleep is unnecessary, and that suggestibility is a physiological function of the waking human brain. Proceeding from simple verbal affirmation, Bernheim passes in review the various procedures which are possible on this basis. The induced sleep may be employed, but though Bernheim still occasionally adopts this method, he attaches little or no value to it. Then there is persuasive suggestion by rational arguments, and for this Bernheim claims credit as against Dubois, of Berne. There is, further, persuasion by appeals to feelings and emotional influences. Persuasion, however, may fail, and then there is active suggestive education, the training of the will. Suggestion may, further, be disguised in practical methods, such as massage, drugs, etc. Then there is the method of subterfuges, as relieving pain by

injecting clear water instead of morphia. Or there is the method by psychic substitution which consists in suggesting to the patient new and harmless acts as derivatives for his symptoms. Bernheim admits that psychoneuroses may yet remain rebellious to all suggestive treatment, for the patient's own auto-suggestion may be too powerful, and, moreover, there are many psycho-neurotic troubles which from the outset are associated with underlying diseases. But in most cases of simple psycho-neurosis, he maintains, psycho-therapy remains efficacious, and is a rational medication which the physician must not neglect.

HAVELOCK ELLIS.

Mental Conflicts and Misconduct. By WILLIAM HEALY. Boston : Little, Brown & Co., 1917. Pp. 330, 8vo.

Dr. Healy, Director of the Psychopathic Institute of the Chicago Juvenile Court, and author of the important work on *The Individual Delinquent*, reviewed in the *Journal* two years ago, deals here with some aspects of the fundamental problem of the causation of misconduct. He is mainly concerned with cases in which hidden early experiences of inner conflict lead to misconduct often having no apparent connection with the conflict. In this investigation the author is careful to explain that he is tied to no one psychological school, and though he has learnt much from various writers on psycho-analysis he does not practise, or in his own work find necessary, any strict technical methods of psycho-analysis, and prefers to use the simpler and more general expression, "mental analysis." He regards such investigations as very necessary in view of the decay of the old ideas of punishment, and the recognised need of inducing in the offender self-directed tendencies towards more desirable behaviour. From that point of view the results here recorded are highly promising and suggestive.

In his first thousand cases of youthful recidivists Healy found seventy-three instances where mental conflict was a main cause of the delinquency ; in the second series of a thousand there were seventy-four. He regards this as much below the real number, for he had not then realised the importance of such conflicts. Even the incomplete 7 *per cent.* are not, however, a negligible number. Moreover, the significant fact emerges that they embrace some of the most important cases of delinquency, though at the same time Healy is inclined to think that "individuals particularly well-endowed in emotional qualities and finer feelings are the more prone to suffer from mental repression and conflicts." These cases are also usually about the average in mental ability.

A great variety of misconduct is found to arise on the basis of mental conflict, ranging from the sustained bad behaviour of childhood to deeds of actual crime, including obstinacy, destructiveness, truancy, vagrancy, stealing (with pathological stealing and so-called "kleptomania"), forgery, sexual offences, injury to others. It is remarkable that some of these misdoers are not carrying out their own keenest desires ; their misdeeds are, as it were, "forced by something in themselves, not of themselves" ; they involve no pleasure. It may be noted that Healy gives no special attention to sexual offences, as these have

been much studied by other workers, but he remarks that he has been greatly surprised to find how much delinquency of various types had its beginning in unfortunate sex knowledge, which came into the mental field as a psychic shock, producing emotional disturbance; this is well illustrated by many of the cases here brought forward.

In successive chapters are reviewed, with numerous illustrative cases, conflicts accompanied by obsessive imagery, conflicts causing impelling ideas, criminal careers developed by conflicts, conflicts arising from sex experiences, conflicts arising from secret sex knowledge, conflicts concerning parentage (as when the child discovers that he is illegitimate, or that an alleged parent is not the real parent), conflicts in abnormal mental types, conflicts resulting in stealing (with instructive cases of "kleptomania," showing that the real concealed source of the delinquency often has no obvious connection with the nature of the delinquent act), conflicts resulting in running away, conflicts resulting in other delinquencies.

The author concludes that mental conflicts do not imply a peculiar constitution; they commonly produce misbehaviour in individuals who prove themselves by examination and history to have, apparently, normally stable nervous systems. Nor is there any good evidence of hereditary basis, though, like offenders in general, these cases come from stock on the average poorer than that of non-offenders. The age of onset is youthful, and probably never later than early adolescence. But the conflict may lie dormant, or repressed and unrevealed, for months or years. It must not, however, be supposed that these cases are usually of moody, depressed, or "shut-in" types; they are often frank, open, cheerful, and, outside their conflicts, healthy-minded. Still they are sensitive, and tend to respond peculiarly to certain experiences, though not hypersensitive in other directions. No race or nationality is specially affected, and in mental ability these cases are far above the delinquent average. Mental tests have failed to be of diagnostic value. The author believes that some cases of so-called moral imbecility and constitutional immorality are only instances of misconduct reactions to mental conflicts. The prognosis is often good, and the results have sometimes been remarkably satisfactory. In the study of mental conflicts we have a scientific method of approaching certain problems of misconduct, Dr. Healy concludes, with a prospect of rendering real service to humanity.

This simple, lucid, and systematic study of a new case-group is the work of one who must be accounted a master in the field of criminology, and cannot fail to be helpful to all whose business it is to explore and redirect abnormal human conduct.

HAVELOCK ELLIS.

Manuel de Psychiatrie. Par le Docteur J. ROGUES DE FURSAC, ancien chef de clinique à la Faculté de Médecine, médecin en chef des Asiles de la Seine, expert près les Tribunaux. 1 vol. in-16, de la Collection médicale, 509 pp., cinquième édition, revue et augmentée (Librairie Félix Alcan). 7 fr. 70 net

When a text-book has reached its fifth edition the reviewer has an easy task. The public to whom it appeals has given a verdict so

decisive in its favour that little remains to be said in the way of praise and no condemnation is permissible. Moreover, when that book is translated into another tongue (English) and in this form reaches a fourth edition, it is evident that the appreciation of its good qualities is not confined to the country of its birth. This translation, made by A. J. Rosanoff, and published in New York, was comprehensively reviewed in the October, 1917, number of this Journal. Readers, however, will wish to be informed in what respect the new edition differs from its immediate predecessor.

Under this heading the matter which attracts chief attention is the chapter on traumatic and emotional psychoses, which, after a useful account of the traumatic psychoses of civil life devotes itself to the psychoses caused by the war. Corresponding to our shell-shock the French have the word *obusite*, which the author considers *passablement barbare*. It is a long chapter very well written, and most useful to those engaged in treating such cases.

War psychoses are divided into three classes. The first class includes those patients in whom there is gross injury to the brain, the second those with small hæmorrhages in the brain, and the third, those in whom there is no organic lesion. With regard to the first class, it is to be noted that though the cerebral lesion may be extensive the mental disturbance may be slight. The author had under care a wounded man who had lost the greater part of his two frontal lobes from a shell explosion. It was thought that about 200 grm. of brain substance had been destroyed. Four months afterwards the only symptoms present were slight psychic enfeeblement consisting principally in weakness of attention and memory. The third class is by far the largest, and includes those shell-shock cases who are suffering from no apparent physical injury. Their symptoms, the author is convinced, are entirely of an *emotional origin*. It would occupy too much space to follow him through his description, but as regards the treatment of such cases, he is emphatically of the opinion that they should be detained at the forward ambulance stations and not sent to the base hospitals. At first sight such a policy would appear to be contrary to all common-sense, but M. de Fursac makes a very strong case for this opinion.

A second addition is the chapter on the use of psychotherapy in mental diseases. This term includes a wide range of measures, *e.g.*, employment, entertainment, and the like. It is interesting to note that he forbids dancing which he states to be harmful. This view hardly coincides with English opinion. No mention is made of the cinema, which is now becoming a very popular form of entertainment in English asylums. Psycho-analysis meets with but scant courtesy, and an illustration is given of the harm which may ensue when it is used without care.

The prophylaxis of mental diseases includes a very interesting study of the various methods used in different countries to combat the drink evil.

The unsatisfactory nature of the name "dementia præcox" is commented upon at some length, and schizophrenia is now bracketed with

It has three divisions—simple hebephrenia, catatonia, and delusional hebephrenia.

A new chapter appears under the heading of chronic systematised hallucinatory psychosis which was formerly included under dementia præcox. This is a return to former paths, as it is a purely French conception which has been graphically described, first of all by Magnan under *déire chronique*, and later under other names by Séglas, Ballet, and others. The subject is worthy of a more extended treatment than can be given in a review.

To sum up, this is a most excellent book, written in the clear, concise manner which seems to be the special gift of the talented nation across the Channel.

R. H. STEEN.

Collected Papers on Analytical Psychology. By C. G. JUNG, M.D., LL.D. Authorised translation edited by Dr. CONSTANCE E. LONG. Second Edition, 1917. London: Baillière, Tindall & Cox.

The fact that in so short a period as one year a second edition has been called for must be most gratifying to both author and editor, and testifies to the interest taken in psycho-analytical matters in English-speaking countries. The former edition was reviewed in the October, 1916, number of this Journal, so that on the present occasion it will be necessary merely to describe the new matters introduced. And this is not so small a task as might be expected, as the present edition exceeds by exactly one hundred pages the size of its predecessor.

Chapter XIV, which was headed "New Paths in Psychology," has become "Psychology of the Unconscious Processes," and has been rewritten and expanded. A new chapter (XV) has been added, entitled "The Conception of the Unconscious," and though apparently written at an earlier date contains the final and special views of Dr. Jung in a summarised form.

To epitomise the thoughts of Dr. Jung in these chapters is almost impossible within the limits set by the Editors. The author himself feels that his own words are somewhat of an epitome, as he says in a foreword to Chapter XIV that "The material is extremely complicated and difficult. I do not for a moment deceive myself into thinking this contribution is in any way conclusive or adequately convincing. Only detailing scientific treatises about the various problems touched upon in these pages could really do justice to the subject."

It may, however, be stated that the chapter opens with the history of psycho-analysis and describes Freud's work. This is criticised, and the conclusion is reached that his sexual views are too one-sided. Then follows a short account of Adler's work. The two psychological types, *i.e.*, the introverted and the extroverted, are described, and the want of harmony existing between Freud and Adler is explained by the fact that each observer was dealing solely with one of these types. After this is discussed, the differentiation of the unconscious into two layers, the personal (that belonging to the life-history of the individual) and the impersonal (that belonging to the life-history of the race). As an example, a dream is given with an analytical interpretation, then with a synthetic or constructive interpretation and a long discussion on the transference and its relation to the impersonal or superpersonal unconscious ends the chapter.

It is not the present intention to criticise the volume. To do such with any adequacy would require a lengthy article. Furthermore, the author in the passage quoted above, disowns criticism. It is only right to state that at the present time a considerable amount of interest in matters psycho-analytical is being shown in England. The attitude most frequently adopted is one not of belief, nor of unbelief, but of careful sifting and weighing. The ordinary man (in contradistinction to the psycho-analytic expert) is woefully confused. He has been led to think that Adler and Jung are pupils of Freud and yet he finds the last-mentioned in his *History of Psycho-analysis* excommunicating these two followers. Jung apparently feels he will have to plough a lonely furrow, for he says, "every pioneer must take his own path alone but hopeful, with the open eyes of one who is conscious of its solitude and the perils of its dim precipices." Jung has sketched a large picture. Various figures are outlined, and the background requires filling in. When the picture is finished, then will come criticism. Meanwhile, what has been produced gives ample food for reflection.

R. H. STEEN.

Part III.—Epitome of Current Literature.

1. Physiological Psychology.

The Scope of Behaviour Psychology. (*Psychol. Rev.*, September, 1917.)
Watson, J. B.

The author begins by defining psychology, in accordance with the modern tendency, as "a division of science which deals with the functions underlying human activity and conduct." That is to say, it is an attempt to formulate how an individual or group of individuals will adjust themselves to the situations of life, and to establish principles for the control of human action—which is what everyone is always doing without calling it psychology. Common-sense, however, useful as it may be, will not go far enough; we need systematic psychological procedure.

As a science the task of psychology is to unravel the complex factors in human behaviour from infancy to old age. The goal of psychology is "the ascertaining of such data and laws that, given the stimulus, psychology can predict what the response will be; or, on the other hand, given the response, it can predict the nature of the effective stimulus." The word *stimulus* is used as in physiology, only with a more extended sense, and when there is a complex group of stimuli, as in the social world, we speak of *situations*. Similarly, *response* is used as in physiology, only with a more extended sense, and when it is manifold we speak of *act* or *adjustment*. In distinguishing among types of acts, the old speculative psychologist introduced needless technicalities and metaphysical concepts like "purposes," "end," etc. "Psychology is not concerned with these distinctions." The psychologist is concerned with behaviour, and behaviour on analysis is "the separate systems of reaction that the individual makes to his environ-

ment." Such adjustments depend on the integration existing among the receptors, or special sense-organ tissues, and the muscles and glands. The various possibilities of reaction are thus seen to be vast. But they fall into four main classes: (1) Explicit habit responses, like tennis playing, etc.; (2) implicit habit responses, *i.e.* "thinking," by which we mean sub-vocal talking, with all its muscular activities; (3) explicit instinctive responses, like sneezing, walking, etc.; (4) implicit instinctive responses, including the whole endocrine secretory activity.

Psychology is separable into eight divisions: individual, vocational, child, folk, educational, legal, pathological, and social psychology. In its relations to other sciences, it is dependant on physics, as every science is at bottom. Its relation to neurology is less essential than is commonly supposed, and psychological laboratories should not undertake to teach neurology, although some notion of the elements involved in reflex arcs is essential. The distinction of psychology from physiology is that while the latter teaches us concerning the functions of the special organs and certain combined metabolic and other processes, psychology deals with the organism as a whole in relation to the environment as a whole; they are entirely independent, yet not antagonistic, for "physiology is psychology's closest friend among the biological sciences." In relation to medicine, psychology should form the background to the whole field, but has hitherto been of comparatively slight service because it has dealt so largely in speculation and philosophy. It should instruct the physician in those methods of approaching and handling patients which can be expressed in no other than behaviour terms. Such factors concern everybody, but especially the physician on account of the intimacy of his relation to his patient. "The psychiatrist has not neglected these factors; indeed, it has been due to him that they have been emphasised at all. In so far as psychiatry is concerned, I think we can say that the psychology the psychiatrist uses is not different from the psychology we are trying to study." HAVELOCK ELLIS.

2. Clinical Neurology and Psychiatry.

Mutism, Aphonia, and Deafness among Soldiers, of Psychical Origin, from Organic Causes: Malingering and Objective Differential Diagnoses [Mutismo, Afonia, Sordità nei Militari, di Origine Psicica, da Cause Organiche: Simulazioni e Criteri Differenziali Obiettivi]. (Rivista di Patologia Nervosa e Mentale, March, 1917.) Gradenigo, Prof. G.

In this paper the writer is not concerned with the sensorial-idealistic side of the phenomenon of speech, but only with the motor side; he is concerned only with mutism or the complete failure of speech (motor aphasia), and with aphonia or the failure of the laryngeal sound with persistence of the whispering voice.

The organic causes of these conditions and of deafness may be divided into two categories: those due to various diseases, and those due to grave traumatism of the head and neck. "These traumatisms in the present war are caused for the most part by terrible explosions, which produce lesions, sometimes very grave, of the ears, such as

lacerations and destruction of the tympanum, neurolabyrinthic disturbances and hæmorrhages, fractures of the temporal bones, etc., also cerebral disturbances, fractures of the skull, etc. Sometimes the patient has been thrown to a distance with great force, either striking his head against a rock, or being buried under a heap of stones or earth." The same explosions may provoke also morbid psychical manifestations.

In the majority of the psychical forms of these cases there undoubtedly exists a predisposition to disease of the nervous system, a feebler power of resistance to morbid factors. The principal predisposing elements are endogenous intoxications and states of exhaustion of the nervous system (fatigue, insomnia, indigestion, and disease, particularly typhoid), and exogenous intoxications (alcohol and tobacco). Further, the emotions, preoccupations, and the ever-present thoughts of dangers, which have been overcome, or are about to be overcome, act injuriously on the nervous system. Among other determinative causes of the psychical forms are mechanical and acoustic injuries from the explosions of shells and hand grenades in the vicinity, exposure to prolonged and intense bombardments, and especially strong psychical impressions, as fear, etc. The simultaneous action of these various and energetic causes produce in the patient—especially if his nervous system has little resistance—stupor, a thundering noise in the ears, sometimes true psychoses, in which, by the side of the most different forms of psychical and sensorial disturbances, one finds frequently deafness, mutism, and aphonia due to the exaggerated stimulation of the acoustic centres and neighbouring cortical centres of speech. One easily understands this when one thinks of the intimate connection between the voice and all the manifestations of affective life.

Passing on to a closer study of the psychical forms, the writer points out that such patients often behave very much like common malingerers, because in each category one is concerned with phenomena of the will. In the case of the really diseased person there is a perversion and an impotence of the will due to auto-suggestion which is often very difficult to overcome; in the malingerer there is the will to deceive.

Complete mutism is rare in the organic forms, while in the psychical forms it is generally the rule. Psychical mutism is not accompanied by verbal deafness, agraphia, or optic aphasia. In a psychical form allied to mutism one observes a scanning, dragging, slow speech. At other times there is disturbance of the respiration in speech; for example, the expiration may be broken and interrupted, as when one forces oneself to speak after a rapid and fatiguing run.

Passing on to aphonia, the writer points out that in the respiratory function the abduction of the vocal cords is chiefly automatic, being essential to life, and is concerned with the bulbar centres. On the other hand, phonation is a function of a higher order, because it is connected with speech, and is concerned chiefly with cortical centres. It follows that aphonia is met with principally in psychical cases. The writer proceeds to study with some degree of detail the connection of disturbances of the function of deglutition with mutism and aphonia.

In considering the subject of deafness, it is pointed out that the cochlear nerve, which serves a most important function of psychical

life, namely, hearing, is chiefly connected with cortical or cerebral centres; whereas the vestibular nerve, which furnishes impressions which under ordinary circumstances do not arrive in the field of consciousness, serves a function of automatic life, and is chiefly connected with bulbar and cerebellar centres. From this follows an important clinical fact, namely, that a labyrinthic or retro-labyrinthic lesion (usually an injury to the base of the skull) involves generally both of the sensorial mechanisms, while a central lesion, cerebral or cerebellar, affects usually only one of these mechanisms; and since an organic cerebral lesion never, perhaps, causes complete deafness (too little is yet known of the cortical centres of hearing, even if there be one in each cerebral hemisphere or not), it is consequently an organic cochlear lesion which causes grave or total deafness, and is concerned, at least for a certain period of the disease, with disturbance of the mechanism of equilibrium. The traumatic lesions, which cause complete unilateral or bilateral deafness, are especially fractures, direct or by *contre-coup*, of the temporal bone. In cases of deafness from organic causes, in addition to deafness itself, there are symptoms of cochlear irritation (subjective noises), and there are more or less grave disturbances of equilibrium (uncertainty in the erect posture and in walking, with a tendency to fall towards the injured side), vestibular nystagmus, vertigo with nausea and vomiting, etc. Psychical deafness differs from organic in being almost always complete, and in not being accompanied by symptoms of cochlear and vestibular irritation.

The writer makes a careful study of the differential diagnosis of organic, psychical, and simulated deafness. Among the many points that he mentions, the following are perhaps the most important: The really deaf person looks you straight in the face when you speak to him. He follows with attention the gestures and the movements of the mouth of the speaker. He willingly furnishes detailed indications of his illness, and gives precise replies during the functional examination, which renders it possible to accurately estimate the power of hearing, etc.

The psychical deaf person is often apathetic and indifferent; sometimes he is hilarious or fatuous; and sometimes he presents the physiognomy and behaviour of a psychopathic.

The malingerer is sad and diffident. He avoids the glance of the interrogator, prefers to keep his eyes fixed on the ground, replies evasively to questions, and sometimes adopts a voluntary mutism or the rigidity of an automaton, which it is difficult to make him give up. He lends himself very unwillingly to functional examination, and gives replies which are generally not very precise, and are sometimes evidently false. Further, and this is most important, he refuses general narcosis when it is proposed as a method of cure.

When a loud and unexpected noise is made near the ear of a patient who hears normally, we may observe certain reflex actions. Sometimes there is a brusque turning of the head, or even of the whole body towards the point whence comes the sound. Sometimes there is a quick winking of the eyelids of both eyes, or of the eye only which is nearest to the sound. This reflex is rapidly exhausted, particularly if the sonorous stimulus be renewed rhythmically. Sometimes this reflex is limited to the eye on the side corresponding to the ear which hears

best, or it may be quicker on that side. This reflex has been studied by the writer and by Prof. Amedeo Herlitzka by the means of graphic methods. It is a reflex of cochlear incidence, and the latent time is about $\frac{1}{1000}$ of a second. Some persons with good hearing succeed in inhibiting all reflex action. On the other hand, a loud sound may occasionally cause the reflex in very deaf people.

The article concludes with a few paragraphs on the therapy of such cases as have been under consideration. In the psychical forms of mutism, aphonia, or deafness, it is often advantageous to resort to psychotherapy as well as physical methods of cure. Good results have been obtained by treating patients suffering from mutism and functional deafness by a kind of sound-bath in a very resonant room, where by means of organ-pipes intense sonorous vibrations of different pitch are produced.

But the method of therapy, which has been most successful in the hospital to which the writer is attached (Prof. Gradenigo is Lieutenant-Colonel in the Medical Service of the Italian Army), is that of general narcosis, produced preferably by ethyl chloride, chloroform, or the *liquore sonnifero dello Zambelletti*. It must be understood that it is illegal to put an Italian soldier under the influence of an anæsthetic without his consent. Patients who are anxious to be cured are always very willing to undergo this treatment, and even demand it peremptorily. Sometimes the willingness or unwillingness to undergo this method of treatment serves to discover a malingerer. Usually, if the treatment be successful, when the patient wakes up from the narcosis, he falls into a profound hysterical crisis with various nervous disturbances, feeling of faintness, profuse sweats, etc. In other cases excellent results have been obtained in psychical mutism by motor re-education of the movements of respiration and of articulation.

J. BARFIELD ADAMS.

The Brain and Genetic Function. (Urolog. and Cut. Rev., October, 1917.) Ceni, Carlo.

Prof. Ceni, of Cagliari, after first summarising some of the earlier of his well-known and highly-important experiments on the relations of the sexual impulses to the brain, here sets forth his latest results. His observations in general have shown that in the cerebral cortex there are centres which exercise a special influence on the functions and trophic processes of the sexual glands. Spermatogenesis and oögenesis take place under the continuous action of the higher centres which impart regulatory and inhibitory stimuli to the various processes of procreation. Thus mutilation of a lobe or hemisphere in chickens or pigeons produces more or less involution, usually, though not always, transitory, on the whole male or female sexual system. The central inhibitory centres vary considerably from species to species, and on the whole in direct proportion to the evolution of the species. In guinea-pigs the relation is almost *nil*. It is present in the pigeon and the rooster, but much more evident in the dog and in man. In the turtle, on the contrary, as Ceni's pupil, De Lisi, has shown, total decerebration has not the slightest effect, immediate or remote, on the trophism and

functions of the male or female sexual glands, which seem to be regulated exclusively by the lower centres. Cocks and hens, after total scarification of the cerebral cortex, retain (after recovering from shock) their sexual instincts unimpaired, though they are almost incapable of reproduction. In totally decerebrated pigeons the sexual glands, male and female, continued to function with apparent regularity. We must conclude, therefore, that in birds and lower mammals the sexual glands possess an unquestionable autonomy in relation to the cerebral centres. In the higher animals we can only speak of a relative autonomy. Without complete and constant stimulus from the superior centres through the central sympathetic cortico-spinal paths, the inferior centres lose the equilibrium necessary for their normal function, and the sexual glands become torpid or easily exhausted. Ceni has made many experiments in testicular grafts by which, for instance, a capon may be made a true cock, though unable to procreate. It would clearly appear that the internal, as well as the external, secretions are conserved in the transplanted sex-gland. But Ceni does not believe that the independence of the organ from the nervous system is thus demonstrated, for the graft, when attached, undoubtedly comes into nervous as well as vascular relation with the rest of the organism. The action of the higher centres must no longer be ignored, for to them are reserved, not only the inhibition in general of the sexual glands, but in particular the regulation of all the laws, outside trophism, around which the mystery of procreation revolves; sexual periodicity, the procreative potentiality of the individual, etc.

The effects of psychic influences on generative power are finally discussed. The fact that shock of the genital organs corresponds to that of other visceral organs indicates the correlation with psychic centres. It is, indeed, more intimate and direct than in the case of other organs. It is not a question of simple shock, but of grave functional and trophic disturbances of psychic origin, persisting for weeks or months, and perhaps leaving a deleterious impression on the progeny. In men the general condition may be quickly restored, but arrest or aberration of spermatogenesis continues for months. Very prolonged sterility follows mental overwork or cerebral exhaustion. Even more unfortunate are the results following earthquakes, wars, and sieges. "We would call the attention of eugenists in particular to the value of these observations in the tragic moment through which we are passing, and they may well ask themselves whether the human race is more threatened by the storm of extermination of the present fury, or by the pain and suffering of the spirit."

Prolonged psychic strains are equally important on the individual and the offspring. Variations in psychogenic stimulus may be either of deficiency or augmentation. In the former case the individual may become incapable of reproduction. In the latter case the same result may be reached through the over-activity of the intellectual centres, as we see in the frequent sterility of great men, though excess of psychic stimulus may act as a sexual excitant as well as a depressant. "Thus the brain as a regulatory organ in the great mystery of procreation acquires a new place in physiology."

HAVELOCK ELLIS.

3. Sociology.

Evolution and Ethics [L'Evolution dans ses Rapports avec l'Ethique].
(*Rev. Phil.*, September, 1917.) Lynch, A.

The author discusses in a free and vigorously independent manner, from his own psychological and philosophical standpoint, the relations of science and morals. He disputes the right of biologists to speak with authority on ethics without taking all its new conditions into consideration, and especially objects to those biological epilogists of war for war's sake, who distort even biology itself in order to draw false deductions. The author regards Truth, Energy, and Sympathy as the fundamental principles of morals, the "tripod of ethics." He insists on harmony between the intellectual and moral constitution, and on the right of the psychologist and philosopher (not, however, the vague and aimless metaphysician of the past) to control and revise the conclusions of the biologist, who even in his own domain cannot escape the psychologist. When, moreover, the matters of a discussion are furnished by several sciences, the specialist must seek the aid of philosophy, "mother of all the sciences." Then, turning to Herbert Spencer, of whom he speaks with great respect and admiration, the author explains at some length why he regards the Spencerian principle as sterile for the development of science, as well as not sufficiently precise in expression, nor even rigorously correct.

"The amœba, considered from the point of view of the aim of its activities, is better developed than any being in creation; and the savage, according to Spencer's formula, should much excel the man of science." The criterion of development cannot be established *in vacuo*. We must consider the environment and the aim.

While insisting that in science are found the great general lines of what constitute civilisation on the material side, and that "the character of a nation's scientific organisation constitutes one of the surest criteria of the degree of its development and culture; the author also maintains the principle that "intellectual advance is always accompanied by moral advance," and would even go further and claim that "it is moral development which communicates the impulsive force to intellectual development." It is the flame of the ideal which has inspired all the great men of science, and without it the man of science is merely a fortunate mechanic.

In view, moreover, of the social disturbance of modern times, the author holds that "the principal efforts of the culture of the civilised world should be directed to morals," and, here attaches importance to sympathy, in which he includes co-operation and fraternity. In insisting on the part played by the ideal in the lives of individuals and peoples, the author points out we are not losing contact with reality, and he reprobates the "spiritualising" of false idealism. The ideal must always be bound to the real. The reproductive instinct, the primitive appetites of man, even his vanities lie at the basis of idealism. Every flight towards the ideal must be in harmony with truth, without ceasing to remain in contact with reality.

HAVELOCK ELLIS.

Part IV.—Notes and News.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was held at the Maudsley Hospital (4th London General), Denmark Hill, London, S.E., on Thursday, February 21st, 1918, Lieut.-Col. D. G. Thomson, M.D., R.A.M.C. (President), in the chair.

There were present about one hundred members and visitors. The following signed their names in the book as having been present at the meeting or as having attended meetings of Committees:

Sir G. H. Savage, Sir Robert Armstrong-Jones, Drs. Fletcher Beach, David Bower, A. N. Boycott, A. Helen Boyle, W. M. Buchanan, P. E. Campbell, James Chambers, P. C. Coombes, Sidney Coupland, Maurice Craig, H. Devine, J. Francis Dixon, E. L. Dove, R. Langdon Down, Thomas Drapes, R. Eager, J. H. Earl, F. H. Edwards, G. F. Fothergill, A. Hume Griffith, F. R. King, E. S. Littlejohn, T. S. Logan, Alfred Miller, W. F. Nelis, D. Ogilvy, N. Oliver, J. G. Porter Phillips, James Scott, J. Noel Sergeant, G. E. Shand, W. Starkey, R. C. Shaw, G. E. Shuttleworth, T. W. Smith, T. E. K. Stansfield, P. Steele, James Stewart, R. Stewart, R. J. Stilwell, W. H. B. Stoddart, F. R. P. Taylor, C. M. Tuke, John Turner, and R. H. Steen (Acting Hon. General Secretary).

Visitors: Col. H. G. Maudsley, Lieuts. H. A. Dicokin, U.S.A. Army Medical Service, W. I. Lille, U.S.A. Army Medical Service, G. Taykor, U.S.A. Army Medical Service, and Drs. A. W. Hall, J. H. Mooney, T. A. Taylor, E. L. Forward, J. S. Havelock.

Present at the Council Meeting: Lieut.-Col. D. G. Thomson, M.D., R.A.M.C. (President), in the chair, Sir Robert Armstrong-Jones, and Drs. A. Helen Boyle, James Chambers, Thos. Drapes, R. Eager, A. Miller, J. N. Sergeant, T. E. Knowles Stansfield, G. E. Shuttleworth, and R. H. Steen (Acting Hon. General Secretary).

Apologies for unavoidable absence were received from: Drs. G. N. Bartlett, C. C. Easterbrook, H. Wolseley-Lewis, R. H. Cole, J. Mills, R. B. Campbell, T. S. Adair, John Keay, C. Hubert Bond, H. de M. Alexander, J. G. Soutar, G. D. McRae, J. R. Gilmour, and Lieut.-Col. H. A. Kidd, R.A.M.C.

The PRESIDENT said that as the minutes were duly published in the January number of the Journal, he hoped members would take them as read.

This was agreed to, and the minutes signed.

BALLOT FOR NEW MEMBERS.

The PRESIDENT nominated Drs. Boycott and Devine as scrutineers for the ballot for the following gentlemen:

GOODFELLOW, THOMAS ASHTON, M.D.Lond., B.Sc., M.R.C.S., L.R.C.P. (formerly Resident Medical Officer, Manchester Royal Infirmary), 60, Palatine Road, West Didsbury, Manchester.

Proposed by Drs. Alan McDougall, David Orr, and R. H. Steen.

PRIDEAUX, JOHN JOSEPH FRANCIS ENGLEDEU, M.R.C.S., L.R.C.P.Lond., Resident Medical Officer, Graylingwell War Hospital, Chichester.

Proposed by Lieut.-Col. H. A. Kidd, R.A.M.C., Drs. H. Devine and R. H. Steen.

They were duly elected.

OBITUARY.

The PRESIDENT said that one of the melancholy, and, he feared, routine duties in these times was for the President to announce the deaths of members which had taken place during the quarter since the last meeting. This quarter showed an unusually heavy and serious loss in the Society's ranks. He only proposed to mention some well-known names. First was Dr. Seward, who, as members were aware, occupied the position of Medical Superintendent of Colney Hatch for many years, and whose death took place this month. There was also Dr. Ellis, of the Straits Settlements—perhaps a less well-known member of the Association—who

died at Singapore on October 8th. Another was Dr. William Julius Mickle, whom members would remember as a Past-President of the Association, and a very learned and clever man he was. A long and good account of his career would be found in the present issue of the *Journal of Mental Science*, therefore it would not be necessary for him to recapitulate the features of his life's work. Perhaps pre-eminent among those whose death they had to lament to-day was Dr. Henry Maudsley, who occupied such an outstanding place in the profession that he proposed to call upon Sir George Savage to say a few words about him.

SIR GEORGE SAVAGE: Mr. President and Gentlemen, I feel deeply the responsibility that you have placed upon me. Generally, I have felt that the best way, perhaps, was to utter some unwritten expressions of one's feelings. I shall never forget the lesson—one of the many I learned from Dr. Henry Maudsley—when I delivered a lecture before the College of Physicians, and endeavoured to do so from notes. He said to me, afterwards: "It would have been very much better if you had read it; you can get a great deal more into reading than you can into extemporaneous expression." Therefore, perhaps, you will excuse me if I put before you what I have to say in that way.

GENTLEMEN,—At the command of our President, I will occupy a short time in trying to express our united respect—I might say reverence—for our late member, Dr. H. Maudsley. Though he died full of years, we shall miss a strong man. It is sixty years since, at the age of twenty-three, he contributed his first article to the *Journal of Mental Science*, and I can strongly recommend all those who have the earlier numbers of the Journal to read the various reviews and essays contributed by Maudsley while Bucknill was editor. Maudsley was a deeply-read man, and his memory for details was extraordinary. I have heard him say that he felt rather a fraud in winning prizes, for he simply wrote out what he visually recalled from the text-books. Shakespeare and the Bible seem to me to have fixed his earlier style, but he was a reader of both English, Scotch, and foreign poets, and he could quote them most appositely.

He was reserved, and not given to wide general society; and I remember telling him that his love of humanity seemed to exclude the individual man. A most careful observer, a great reader, and a voluminous writer, he yet had pleasures and pastimes, such as bowls and cricket. Later, he showed his Yorkshire breeding in his love of the horse, and he thoroughly enjoyed driving a well-bred pair.

It is nearly fifty years since first I met Maudsley, and we have been friendly, but hardly intimate, for he was a man not given to social intimacy. His manner was distant and cynical, but he appreciated honesty of purpose in word or deed.

As I have already said, he began writing early, and you will find the first of his articles in the *Journal of Mental Science* for the year 1859, when he was only twenty-three, and his writing then was as polished and as fresh as ever it was. It was full of his knowledge of Shakespeare, the Bible, and Burns. He also made frequent and apt quotations from Latin and German.

His position as an author cannot be considered here, but his influence was far-reaching, and men at Oxford in the early sixties read his *Physiology of Mind*, and, in some instances, as a result turned to medicine as their life's work. He was fond of writing of the necessity for each man, while recognising that he has work to do, also remembering that he was but a unit.

From his early association with his father-in-law, Dr. Conolly, sprang his desire to grant to the insane the maximum of freedom and all loving consideration. He was, I think, too dogmatic in opposing all forms of mechanical restraint, and he also strongly opposed forcible feeding as demoralising to patient and doctor.

He had a Gladstonian habit of sending post-cards, and I have by me such cards which were sent as warnings or correction. I winced at some of them, but, as a rule, he was right.

I cannot conclude without referring to the many books he wrote. And it is pleasant, but sad, to think of his article in our Journal of October, 1917, on "Materialism" as his swan song.

There is little more for me to say now and here, but I am certain that you knew him, by repute if not personally, and you will agree with me that he was a great power in our branch of medicine, and has left his example as a beacon for us to follow. I will conclude in his own words, in which he described the true philosopher:

"To afford such exalted faculties as man possesses their right exercise is to live a life moral, intelligent, and useful to his kind, and after such a life he may faithfully and fearlessly await the inevitable event, welcoming the grave-digger as the kindest of friends who shall open to him the gates of his Everlasting Mansion."

Lieut.-Col. F. W. MOTT, F.R.S., said he, with Sir George Savage, rose to make a few remarks in this building concerning the late Dr. Henry Maudsley, whom he had the great honour and pleasure of knowing intimately during the last ten years. His acquaintance with Dr. Maudsley came about in this way. He called on him (the speaker) one day and said he would be willing to give £30,000 to the London County Council if they would build a hospital for the treatment of early acute cases of mental disease with the view of preventing such cases entering chronic asylums. He (the speaker) mentioned the matter to one or two members of the Committee, including Sir John McDougal, and he suggested it would be an excellent idea, especially if it could be associated with the University of London. Accordingly he, Lieut.-Col. Mott, drew up a scheme, with Dr. Maudsley's approval, to try and get this proposed hospital connected with the University, so that it might be made a teaching centre for London, as well as carrying out the purpose for which the money was originally given. This was approved by the Principal of the University, Sir Arthur Rücker, and Mr. Balfour. Unfortunately, the party which favoured it did not get into power, and the numerically stronger party did not want to spend money. The result was that the scheme hung fire for a long time. Now, however, things had perhaps turned out much better, because the present hospital was very suitably situated, and since the war had been in operation it had served a very useful purpose. He believed it was an institution which would do very good work in the future. There was no bust to Dr. Maudsley, but in building this hospital he had erected a monument more lasting than bronze. The portrait he showed of the deceased gentleman showed a magnificent head, and Maudsley's mind was the greatest mind he (the speaker) had ever encountered. He had enjoyed many opportunities of talking to him, and on Saturdays it was his custom to go and dine with him. On those occasions they talked over the difficulties of the situation, and he wondered how Dr. Maudsley kept it up as long as he did. However, he eventually won, the hospital was built, and all who had inspected it said it was a very nice one.

Dr. Maudsley felt a great interest in this Association. His earlier work was intimately connected with it, and he had not forgotten it; and, although he was not allowed to say officially, his nephew was present, Dr. Henry Maudsley, his own fellow student, and a worthy representative of his uncle, and that gentleman told him that, although the will had not yet been proved, a large sum of money had been left to this Association. Therefore members of the Association would be extremely grateful to him. And he would like to suggest to Sir George Savage that when he sent his biographical notes to the Journal for publication he should supplement them with the remarkable photograph which he now held, copies of which could be supplied by Messrs. Elliott and Fry.

Dr. Maudsley left an autobiography, in his own remarkable style, and he did not doubt that the relatives of the late Dr. Maudsley would be willing to allow Sir George Savage to see that if he desired to do so.

He was very pleased the Association was meeting in this building to-day, and had Dr. Maudsley been alive he would have extended a warm welcome to the members. Last year the Section of Psychiatry of the Royal Society of Medicine met here, and Dr. Maudsley showed his kindly appreciation by asking that he might provide the refreshments. He would have been equally willing to do that on this occasion. He (the speaker) had nothing more to say than express his welcome to the building which constituted a great monument to Dr. Maudsley's work and his philanthropic spirit. Maudsley's literary work would last for a very long time. He read his books now with the greatest pleasure and profit; and if members would read his *Mental Physiology* they would see that its author was not only original and prescient, but he seemed to get a grasp of the whole of the literature on the subject, a grasp which was extraordinary: it was not a patchwork knowledge, such as many people's knowledge was, but consisted of a solid fabric, woven together in one whole.

The PRESIDENT said he was sure all those present very much appreciated the words which had been used by Sir George Savage and Lieut.-Col. Mott; and

certainly they would wish to thank Lieut-Col. Mott for his kind welcome. He asked the meeting to agree to the following resolution, which he would formally put from the chair:

"That a vote of condolence be sent to the relatives of the recently deceased members of this Association, namely (the names already read out)."

The resolution was agreed to by members rising in their places.

Dr. MOTT said there was present Dr. Henry Maudsley (Col. Maudsley), and he, Dr. Mott, would like to take the opportunity of proposing that he be made an Honorary Member of the Association, because he was a family representative of the great master who bore the same name.

The PRESIDENT said the proposal which Col. Mott had just made would be received by the Nominations Committee at their first meeting.

PAPER.

Lieut.-Col. F. W. MOTT, M.B., F.R.S.: "War Psychoses and Psychoneuroses."

There are two conditions in connection with shell-shock—commotion and emotion. In the old days, when the soldier came into the hospital and one had to learn from him what had happened, it was all shell-shock. But since we have got the new Army Form, we know whether he was blown up or not. I had often had my suspicions that many of these cases were "shell-shy." Only those really have shell-shock who are blown up and lose consciousness, and there is evidence of a condition arising which may produce organic change. If there is commotional shock, there is always the possibility of emotional shock at the same time, and those two factors are often combined in a case. And then you have to consider, as of even greater importance, the make-up of the individual. If he is of psychopathic temperament, he will not stand the effect of either emotional or commotional shock in the same way as will a normal individual. Now, very much depends on whether the person who is the subject of shell-shock was in a closed space, or in an open space, when the shell burst. If a shell bursts in the open, there is plenty of room for the vibrations, the compression and decompression, which take place, to be lost, and in that case it is more likely to be emotional shock which has caused the man's condition. For example, if a man is in a dug-out, or a "pill-box," or in a narrow trench, and a heavy shell bursts in it or on it, there are produced there all the effects of repercussion, and under these circumstances the explosion is more likely to cause physical changes in the man. I have questioned officers who were present on such occasions, and they have said that the men could be seen lying about dead in various attitudes, or in an unconscious condition. In one case, that of a pill-box, a 9'2 in. naval gun had turned it up, and all the men who were inside it were killed, the shock having been tremendous. We know what happens when a bomb is dropped in the roadway; powdered glass is found all over the road, showing that there must be a tremendous air current caused by the explosion. The mischief is caused by decompression; it is that which is responsible for the changes seen in the brains of fatal cases which I am exhibiting. Those who are not killed by such an explosion in a dug-out have a pulse which is scarcely perceptible. Perhaps there is also bleeding from the nose and ears, the muscles are flaccid, perhaps they are in a hypotonic condition; and in addition there is, possibly, incontinence of urine and of fæces. Altogether, the resulting condition is one of marked collapse. When patients are in such a condition—conscious or semi-conscious—their perceptions are materially interfered with. Everything seems to them to be dark and depressing, and though they seem to apprehend what one's questions are, it is difficult to ascertain what is their mental state. Perhaps their movements lack precision and are without purpose. Lumbar puncture is sometimes done at clearing stations, and it is then found that the fluid comes out under pressure. It may contain blood, and will contain more albumin than normal cerebro-spinal fluid, which is practically free from albumin. So lumbar puncture is a very useful way of dealing with the case therapeutically, as well as for diagnostic purposes. Afterwards, the patient always complains of severe headache; there is nearly always tremor, also insomnia and dreams, generally of a terrifying nature. The following is an illustrative instance. An officer only remembered a flash of light when the shell burst; he had a vision of arms and legs flying in the air. He had complete retrograde and anterograde amnesia. He could not remember going to France, nor travelling up to the Front,

although he had written letters describing his journey and his experiences there. In these respects his memory was a complete blank, which could not be made good afterwards. When a man is blown up, he may have contusion as well, but I am not now speaking of those cases in which there is visible external injury sufficient to account for concussion, as many of the cases show. The whole wall of a dug-out may be blown out, or a beam in it may fall on a man, or it might hit him in the back. That accident will produce sufficient bruising to show that concussion is the cause of the symptoms, rather than being the condition which "windage" will sometimes produce. Windage as a factor has been a good deal disputed, but it is now generally recognised that if a shell bursts within a distance of 10 metres it is liable to produce these conditions. In the next room I shall be showing you sections from the first case of the kind which has been described. Unfortunately, in the fatal cases the notes are not very complete, and, of course, with large numbers of cases coming down from the Front, one can understand the difficulties of getting full notes. But it was stated in the notes that this particular man had, six months previously, been getting very nervous and apprehensive, though he was a good soldier. The day before he was evacuated a number of shells had burst near him, but had not knocked him out. But then there came the influence of repercussion. He was in a dug-out, and a large shell burst close to him, and he then became maniacal, as did many of these cases, without losing consciousness. And he evidently had visions of Germans attacking, because he constantly exclaimed, "Keep them back!" It became necessary to give chloroform and morphia to quieten him. He was sent down from the Front to a base hospital, and next morning he awoke, and was, apparently, all right. Then he suddenly died. The *post-mortem* examination was made by Capt. Armstrong—an excellent pathologist—and he stated that the only condition found which was abnormal was the state of the lungs and the heart. The right side of the heart was markedly dilated, and both cavities were full of blood, and there was hæmorrhage into the lung. It is known that, when animals are exposed to these high explosives in a closed space, there ensue marked hæmorrhages into the lung; in fact, the lung condition is a very serious one. Possibly such hæmorrhage is due to the compression and decompression which take place. In this case, too, there is a little sub-pial hæmorrhage, but not very much; I have seen as much following trauma, such as a burn. But when the nervous system is examined, one does not find the punctiform hæmorrhages in the white matter of the brain which are to be seen in cases of carbon monoxide poisoning. It makes one think of the possibility, when a man is knocked over by a shell without sustaining visible injury, and is buried for some time, that he may have been gassed at the same time. If a shell has burst in a closed space, or if a mine has been exploded near, the carbon monoxide gas formed from imperfect oxidation would filter through the earth and poison the enclosed spaces, wherever they may be. Some of these cases die from the combined effect of shock and gas-poisoning. In this case, in the medulla, in the internal capsule, in the pons, and in the cortex of the brain—indeed, throughout the central nervous system—there are hæmorrhages into the sheaths of the vessels. Under a microscope in the other room will be seen a specimen showing a vessel in the median raphe of the medulla with a hæmorrhage into the sheath; it is close to the vagus accessorius nucleus, the one which controls the heart, and so that may have been the cause of the sudden death. The mania which he had I attribute, largely, to the condition of the blood-vessels of the brain. There was marked cortical anæmia, but great congestion of veins, and hæmorrhages all through the brain substance. But the changes in the ganglion cells were very remarkable. There is not much change in the Nissl granules; those in the middle of the cortex, except in the vagus accessorius, are well preserved. And when the Nissl granules are seen in a normal state, the cells have, clearly, functioned normally. This man had not lost consciousness, but was in a maniacal state, due to exhaustion of the brain, following upon the anæmia, the venous congestion, and the other conditions found. He died suddenly, owing to the failure of the respiratory and cardiac nuclei.

I am also showing another case, which I do not know much about, except that the man was brought down in a state of complete unconsciousness. The case was said to be one of shell-shock. There was no visible injury, and yet the corpus callosum, which forms the roof of the ventricles, was found to have been ruptured

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through. Under the microscope in the next room I have placed a section of the white matter of the brain in this case, close to the point at which the rupture took place. All through that portion of the brain, hæmorrhages are to be seen. In that patient every cell of the brain is now affected. The man never recovered consciousness. The Nissl granules and the cells of Purkinji in the cerebellum will be found to have disappeared. One of the commonest symptoms of neurasthenia, especially the shell-shock variety, are the tremors and the muscular weakness, as well as dizziness. The other case shows a much more marked change in the cells of Purkinji than in any other cells in the central nervous system; it shows chemical change and the absence of Nissl granules. One may naturally ask whether the changes found in the cerebellum may not account for the tremors. The cerebellum acts as the organ of reinforcement; indeed, it is *the* organ of reinforcement, and if it is removed, asthenia occurs. The conditions which we found in these cases seem to point to loss of this reinforcing power on the part of the cerebellum. I put that forward as a possible hypothesis, based on some evidence. Crile held much the same view. Crile examined the central nervous system, as well as the endocrine glands, in the case of a soldier who had experienced extraordinary hardships, having had a forced march of 180 miles, and been killed in the Battle of the Marne. Crile found in this case the same change in the cells of Purkinji which I have spoken about, and he associated it with that other theory concerning the adrenal glands which there is not time to enter into now. The preparations I am showing are interesting from two points of view. In one of them you will be able to see there is an increased vascularity of the brain without the changes in the nerve-cells which I have been describing. That is to say, there is venous congestion; the man retains consciousness, but is in a state of mania, as patients so often are after shock. Sometimes they become dazed and wander away, and they have no correct idea of what they are doing. The other is the case of a man who was completely unconscious and never regained consciousness at all. In such a case as the last-named you find much more extensive changes in the substance which we believe is the essential energy substance of the nerve-cells, namely, the kinetoplasm.

That leads me to describe to you another class of case, of which we have had several examples here. I refer to the kind of case in which there is delirium, what is called "dream delirium." These patients have day-dreams as well as night-dreams, and these terrifying dreams go on for months. They are usually of battle scenes; perhaps a recurrent dream about some terrible experience they have passed through. You know such cases are not fit to be returned to the Front. But dreams come rather from emotional experiences. A man who is knocked out with commotion is not so likely to dream as is the man whose disability is due to emotion. Early in 1915 I had a man in the main hospital over the way, who was in the Argyll and Sutherland Highlanders. He had not been at the Front very long when he was sent as one of a company of thirty men to repair barbed wire. A 17-in. shell burst among them and he was blown into a shell-pit some distance off. He was conscious, he scrambled out, and was unhurt. When he saw what had happened, he went down with emotional shock, and I have never seen a worse case; his eyes were staring, and his face wore an aspect of extreme horror. He was continually putting out his hands, and had visions of the sights he had seen. It took six months to get him well enough to be discharged. It was pure emotional shock. It was not the effect upon him of physical force, but what he saw that the force had done.

Another class of case is this: A man is brought in, and he has a sort of mindless expression: he is, indeed, in a state of complete anergic stupor: he notices nothing, and apparently sees nothing. You may not be able to get answers to your questions, or if you do you soon know there is mental confusion. He does not apprehend what you are saying to him, and his associations, as to both time and place, are upset. His condition is very much like that which we see in civil life. But this further stage of complete anergic stupor and mindless expression, the patient taking no notice of anything, I have never seen before in war cases. And what is very interesting is the fact that when these men recover consciousness sufficiently for them to take a little interest in their surroundings, they behave just as children do; they look at picture books, and they not only use the words which young children use, but the voice is modulated on the same juvenile standard. I have full notes of two or three cases of that kind. After a time they seem to

recover. Visitors here have said the condition was dementia præcox, but I tell them the boy will get well, a view they do not accept. But they have got well. There is one case in particular. At first he sat in a crouched attitude, and took no notice of anybody. I got two soldiers to take an interest in him and take him about, and they did, and took a pride in trying to get him well. He began to look up a bit. The King's trumpeter came here, and he said, "If I blow my trumpet I shall wake him up!" He blew very hard, but it did not come off. It took six months, but eventually he got well, and before he left here he was able to play a game of billiards. I think these cases, in the first stage, must show a considerable change of a functional character in the kinetoplasm of the nerve-cells. Some of the cases do not recover at all, but go on to permanent dementia. There was one case, that of a New Zealander, who was buried. We could get no history from him. He sat up and seemed mindless, and yet an expression seemed to come into his face. He performed scratching movements. He had been buried for a considerable time, and this movement of trying to scratch his way out had become stereotyped.

These cases form an interesting study from a psychological point of view, because they show how strong are the instinctive reactions of defence. Nearly always in hysterical conditions we see defence against intolerable situations. A man is blown down by a shell explosion, and when he gets up he has a pain in his arm; and instinctively he simulates hemiplegia, or brachial monoplegia, by auto-suggestion, and by it he gets out of an intolerable situation. He is sent back to a base hospital, but do you think he is going to get rid of it? He will not unless you persuade him. One of the best means of persuading these patients is to assure them that they are not now of much use as soldiers, but may be made use of in civil life. That serves as a fine tonic to begin with. Capt. Wilson is most successful in this way, by his own personal persuasive efforts. The personality of the individual makes an extraordinary difference in these cases: it is really a process of counter-suggestion. All our cases are not pure shell-shock by any means. Among officers a large proportion are pure shell-shock cases, but among the men there are cases of hysterical paralysis and other signs of hysteria. It is very important to remember that there may be an organic basis, with a large functional halo, and we get cases of injury of nerves, and the man has been put up in a splint for some time. He has got an idea he is paralysed, and there is a little stiffness in the joints. That gets fixed in his mind. I think daily massage, electrifying, and sympathetic treatment is the worse course you can adopt in these cases. If you want to make the condition permanent, that is the way to do it. Vigorous counter-suggestion is best. We had three cases up from Croydon Military Hospital, dumb people; and after treating one, we made him shout to the next man to come in. It not only was good for that patient, but it had a splendid effect on the man coming in. And it is extraordinary how grateful these men are for what we can do for them.

You will notice the black footprints on the floor; these are for exercises. A man has a spastic condition of his legs, gives a Babinski on both sides, but the greater part of his disability was functional. We knew it, and so we have removed that halo of functional disability, and he can now walk well. That is what we need to find out; how much is functional, how much organic. The French lay great stress upon this. They say, "we diagnose the difference between organic and functional disease by the effect of treatment." They treat the cases right at the Front, by faradism and persuasion, and they send 80 *per cent.* of their hysterical cases back, and are still doing so. We are getting far fewer of these cases than formerly, and in a letter I had from Sir Wilmot Herringham he said they are sending 60 *per cent.* to 80 *per cent.* back by treating them at the Front, not letting them get to the base and think about it; otherwise, they will fix it up. The sooner you get them under treatment the better. This illustrates the fact that you cannot make a soldier out of a psychopath, or out of a timid man. There was a man (named Hogg) who had been conscripted. This man was the son of an undertaker. The undertaker felt that the boy had not enough courage, and in order to try to make him courageous he made him get into a coffin after he had constructed it: and his mother came at night wrapped in a sheet, to make him used to ghosts. Then the man died, and the brother came, and he said he must keep up the reputation, and he used to shut him in the room

with the corpse to encourage him. But it had no good effect. This lad was conscripted, and was sent to France. He managed to get through his shooting by a non-commissioned officer firing off his rounds. He had not done bomb-throwing. They gave him dummy-bombs, and he did well. Then he was sent up. The first time he got a live bomb he threw it into the air and fell down in a faint. He was of no use. We get these cases, which are of no use; and it seems absurd to conscript those who are not only of no use, but are a positive danger when they get to France. I had a man who had been a congenital imbecile, B 3. A Travelling Board made him B 1, and then he was raised to A. He was back in a fortnight. It pays to go into the family and personal history of these cases. Capt. Wilson did that in 100 cases attending the clinic here, and 100 cases in the surgical wards in the hospital across the road. He found 80 *per cent.* of the neurasthenic and "shell-shy" had something in their history which showed they were neuropathic in some way, whereas only 20 *per cent.* of the surgical cases had such a history. Therefore, the most important factor in connection with insanity is the inborn tendency of the individual. We talk of "exhaustion psychosis," as if exhaustion will produce this condition. There were 10,000 Serbian prisoners, exposed to the most terrible conditions which could be imagined—starvation, typhus fever, exposure to wet and cold—and only five of them became insane. And the German papers have taken something away which shows they appreciate the truth of what I am telling you.

Prof. Marinesco, of Bucharest, is showing extremely interesting specimens of painful neuromata. After an amputation the man will go on all right sometimes, and then the stump will be so painful that he cannot wear an artificial leg. We shall know how to treat it when we know what the cause is, and Prof. Marinesco has shown what the cause is. He has shown that new nerve fibres grow into the tendon and into the muscle, and even into the walls of the arteries; and where they grow there is inflammation. If a tendon moves in an inflamed structure with a nerve in it, it will cause great pain. Therefore, based upon that, what is done now is to pull down the nerve a good way, and cut it out; and possibly some micro-organisms are in the tissues and lie about in foci, because you can see little nodules of inflammation, like tubercle. And the Professor is showing some causes of irritation in some vegetable fibres: they are being eaten up by the giant cells around. They are beautiful preparations, and I will ask you to look at them.

The PRESIDENT said it seemed unfortunate that the Association could not spend a week at this hospital, instead of an hour or two. He was sure those present had listened to Col. Mott with the greatest possible interest and pleasure, and one only regretted the shortness of time available for the discussion of this valuable matter. He, however, invited any who wished to do so, to bring forward points on which further elucidation was sought.

Major Sir ROBERT ARMSTRONG-JONES said he was sorry to have been unable to reach the meeting in time to hear the whole of Col. Mott's address. One knew that in shell-shock one saw a good deal of muscular movement, such as tremors, involuntary loss of control, and lack of co-ordination, particularly when any unusual sound was made. He would like to know whether Col. Mott could give any kind of physiological explanation for this. Especially during an air-raid, these patients could scarcely be controlled, and many people tried to do more than was necessary. Why, in particular, should sound re-start these tremors? He had spoken to several anatomists on the subject, and they suggested that the sound waves were conveyed on from the membrane across the middle ear to the stapes, then on to the endolymph of the internal ear; that the auditory nerve divided into two in the internal ear, the vestibular branch going to the semicircular canals and having to do with static equilibrium, the other branch being the true acoustic or auditory nerve, and that the same vibrations which were communicated to the perilymph of the one were also communicated to the perilymph of the other. He did not know whether that was the real explanation, but it did suggest a connection between loss of self-control and sound. And he had noticed that in a certain number of cases there was nystagmus, and perhaps Col. Mott would suggest an anatomical basis for that. He had also heard—he did not know whether it was the true explanation—that the roots of the motor oculi were very closely connected with the nuclei of the vestibular-nerve, and that vibrations communicated to one would be likely to affect the other.

Dr. SIDNEY COUPLAND said he would like to show members rough diagrams which he unearthed from the dust of forty years on the previous day. It concerned Col. Mott's interesting pathological surmise as to the occurrence of shell-shock and the possible influence of carbon-monoxide poisoning. In the Proceedings of the Pathological Section of the Royal Society of Medicine last year there was an exceedingly interesting paper in which the author said, in almost as many words, that the occurrence of punctiform hæmorrhages was pathognomic of carbonic oxide poisoning, though not absolutely. The author of that paper guarded himself by the statement that he had never met with such a condition from purely asphyxial states unless associated with carbonic oxide poisoning. Forty years ago, when he (the speaker) was making *post-mortem* examinations at Middlesex Hospital, he had a most remarkable case of a kind of which he had not had another example since, namely, of punctiform hæmorrhages in the white matter of the brain, in which the only factor could have been asphyxia, as carbon monoxide poisoning could not have entered into the case. The case was that of a young woman, æt. 21, who was admitted with acute bronchitis. She was very ill, and died within a week from her admission. When she had been in the hospital two days she became semi-comatose, and then deepened into coma, and during the last twenty-four hours of life her temperature was 106° F., or nearly. At the *post-mortem* examination, in addition to anæmia of the brain and lungs, on making sections he found what was to him then the unique condition of a number of vascular points, which at the time he considered to be due to congestion, and which would be washed away in water. These points were in the centrum ovale; there were no similar points in the grey matter, nor in the medullary areas. Moreover, they could not be washed away. The brain substance was firm, and there was an orange-tinted discoloration around the sections. Low microscopic power showed them to be minute hæmorrhages. As he regarded that as a remarkable condition, he brought specimens to a meeting of the Pathological Society, but could get no explanation of the condition. His own idea was that it was merely the effect of passive congestion with venous stasis carried to an extreme degree, and that such a condition might occur much more frequently than it was supposed to. He laid stress on the fact that in that case there was no reason to suspect carbon monoxide poisoning. He thought that case might be germane to the present discussion, and if it were so, it shows that acute asphyxia due to burial may not require the intervention of gassing, in the case of these soldiers, in order to produce in them this pathological effect.

He would also like to ask whether the occurrence of the air-raids on London is having any deleterious effect in retarding the convalescence of the sufferers from shell-shock—He understood from Sir Robert Armstrong-Jones that such is the case—for if so, it becomes a serious question whether an effort ought not to be made to remove these patients to areas where such raids did not occur.

Dr. E. PRIDEAUX said he would like to ask one or two practical questions as to treatment for shell-shock. The first was as to how the difficulty was to be got over of allowing these psychopaths to go back to the trenches. He would like to know whether there were any means to prevent such men being passed for the front line by travelling medical boards, the members of which were liable to pass men into a higher category.

In the actual treatment of the cases he did not think sufficient attention had been paid to the fact that these objective disorders could be cured at once. Aphonia, mutism, and stammering could be cured in five to ten minutes by some form of suggestion. In France the medical officers had been using stammering classes, and he would like to hear Col. Mott's views on that point.

He believed that the ideas underlying the treatment were wrong. Stammering was fixed in the patient's sub-conscious mind, and it became an obsession, and, as such, it was extremely difficult to cure. He had been using hypnotic suggestion, but he did not think it was of moment what particular form of suggestion was employed so long as it was strong enough for the disorder if objective. But in regard to subjective disorders, such as dreams and night-terrors, there he considered that hypnotic suggestion was useful and valuable. He asked whether Col. Mott would make any observations on that point. He had had a good deal of experience with stammerers himself, and he found that stammering following shell-shock could be cured at once by a strong enough suggestion.

Dr. EDWARDS said he would like to ask whether, if one could eliminate the emotional side from shell-shock, shell-shock as such would exist at all, in the opinion of Col. Mott. From that gentleman's writings, and from others, one gathered that the condition of shell-shock was, largely, an alteration of blood. There were sudden changes of pressure in the man's surroundings, and mutism indicated a psychic change. But in caisson disease, in which pressures were suddenly changed, and even where men were employed in firing big guns, one had no emotional state to face, but obviously there were marked and sudden changes in blood pressure, associated with percussion and repercussion, and this seemed to go to the root of the conditions of shell-shock. Therefore he asked whether, if there were no emotional side—the sense of expectancy, of dread, of fear—such as was to be expected in war conditions, shell-shock would exist at all, or whether it was purely a mechano-physical process.

Major EAGER asked whether Col. Mott experienced any difficulty in differentiating between the so-called shell-shock and the condition of general paralysis of the insane. He had himself had 4,000 cases, chiefly instances of psychosis, mental conditions, whereas those which Col. Mott got seemed to be more functional cases. But he had been struck by the fact that cases had been sent over from France diagnosed as shell-shock which had been eventually, without any doubt, proved to be cases of general paralysis of the insane. He had also had cases sent over to him from France diagnosed as general paralysis which he regarded as cases of shell-shock. Another interesting series were those in which, to his mind, the symptoms of shell-shock had been superimposed on those of early general paralysis. And he had collected records, which he hoped to publish later, that showed it was very important, nowadays, to consider the differential diagnosis of shell-shock from general paralysis. He had seen cases of supposed shell-shock which showed the usual physical signs of general paralysis, in the tremors, in both tongue and face, the increase of the deep reflexes, and delusional states, even going on to delusions of grandeur. The pupil signs and the result of the Wassermann test he regarded as very important. He could support the impression mentioned by Col. Mott, that some of the cases seemed to strongly simulate instances of dementia præcox. One case was sent to him as dementia præcox, but the symptoms cleared up in a most remarkable way.

Suggestion he had found very useful in the class of case under discussion, also the hypnotic form of suggestion, particularly with patients having functional paralysis. The early treatment now being used at the Front was a great help.

In regard to a further point mentioned by Col. Mott as to unfit men being passed, he had had a few cases of hydrocephalic imbeciles having been sent into the Army; such cases should certainly not be accepted by recruiting medical officers. He had had patients sent to him who could not read or write, and whom one could only discharge as unfit, but there was always the danger that they might be again swept up by an energetic recruiting sergeant and passed by a medical officer back into the Army.

Lieut.-Col. MOTT (in reply) said, in answer to Sir Robert Armstrong-Jones, that tremors were dealt with by him before that gentleman came. In the two cases of which he was showing specimens, there were changes in the Purkinji cells, and he also made reference to the cerebellum being the organ of reinforcement. It was well known that the labyrinth was seriously affected in these cases, and the French relied on voltaic vertigo in ascertaining whether a case was one of shell-shock or not. With regard to hyperacusis, he could not say whether the theory put forward by Sir Robert Armstrong-Jones was the correct one, but there was a connection between the labyrinth and the cerebellum. He believed the muscular weakness, the fatigue and tremors were very likely connected with this great organ of reinforcement, the cerebellum.

He felt much indebted to the same speaker for calling his attention to an omission; he had not alluded to the fact that one of the most certain signs in these subjects was the disturbance caused to them by loud noises. He recently had a case which was extraordinary in that way, because it so well illustrated the defensive reflexes. This particular man had a peculiar "dodging reflex": he (the speaker) went near to him and clapped his hands, and immediately he put out his hand in a protective way and ran away, all the time seeming to push something off from himself. There was no doubt, from the tics and the spasms which these men got, that they were dodging shells stimulated by the unconscious mind.

With regard to dreams, many of the conditions seen were the experiences the men had had at night coming to the threshold of day, and one found these men in the mornings looking anxious. He had had cases in which there was mania, owing to hallucinations.

He had been interested in the drawings exhibited by Dr. Coupland, because if he had seen them earlier he would have mentioned the fact in his lectures. In the last paper he wrote, published in the Proceedings of the Pathological Section of the Royal Society of Medicine, he mentioned that other conditions would cause these punctiform hæmorrhages besides carbon monoxide poisoning. Carbon monoxide acted because of its power of de-oxygenation. He had never seen another case of that, though he had seen a number of cases of status epilepticus. He had mentioned why he thought the cause should be in the terminal arterioles of the white matter of the brain. There was a hyaline thrombosis, such as had been shown to exist in other conditions, such as malaria and measles. That reminded him of a case he had of gas poisoning, in which there was marked asphyxia. There the vessels were found to be blocked with blood-pigment, which had been produced by the destruction of the hæmoglobin. Thus both the asphyxial and the embolic factor operated in these cases.

Dr. Edwards asked whether, if the emotional element could be eliminated, there would be any shell-shock at all. There was a difference of opinion in Germany, in France, and in England on this subject. He did not think anybody had yet described changes in the brain such as would be seen in his specimens, with hæmorrhages all through the substance of the brain. It must be remembered that nerve-cells were not hard structures; they were delicate colloidal structures, and if there was enough physical shock to burst blood-vessels by the decompression, it might be that this caused such a vibration of the particles in the nerve-cells that shock was produced. Probably it was true that it was the condition of the vascular centre which caused the shock. It might be a case of anæmia, and, of course, the emotional shock might be brought about simply by the production of anæmia in the brain, a temporary condition. For every case of true shell-shock one met with ten cases of emotional shock.

He had been very much interested in hearing Major Eager's experience, because it was based on such a large number of cases, and what Major Eager had said corresponded entirely with the results in the more limited experience which he (the speaker) had had.

With regard to the difficulty of diagnosing shell-shock in cases of early general paralysis, many cases he had seen proved how great that difficulty was; indeed, in some cases he was doubtful whether it was general paralysis at all. A case in point was that of an officer, a first-rate man, who had done excellent service, and who developed mania. He was found to have unequal pupils, and sluggish reaction to light. But Col. Mott had seen that in ordinary shell-shock cases, especially those in which there was a history of gassing. The blood of this patient, however, was examined, and a positive Wassermann obtained. Under ordinary circumstances he did not attach undue importance to a positive Wassermann unless he knew who had carried the test out. But if one obtained a positive Wassermann in the cerebro-spinal fluid, that meant something, and he had found that this was the only really reliable method of determination. In many of these cases no one save an expert, and only he after the most careful examination, would know that there was anything the matter with the patient, and, in the absence of definite symptoms, the patient might even be sent back to the Front. He did not wish, on the present occasion, to speak of mistakes made in recruiting, but he had seen cases of quite obvious tabes which had been existing for years admitted into the Army. Those cases had Argyll-Robertson pupils, pains in the legs, and gastric and other crises. One man in this condition was sent off to Egypt, had a fit while in that country, and was sent back again. That kind of thing, of course, was not right. On the other hand, people who were said to have tabes were found not to have that disease at all. He could narrate a remarkable instance of that. A man was supposed, owing to the absence of knee-jerk, to have tabes, and he was, accordingly, declared to be unfit for the Army. His wife went to work in a munition factory, and, when asked why her husband was out of the Army, said he had got locomotor ataxy. She was, thereupon, told that she had better leave, as she was infected. Therefore, the woman had to go and have her blood tested.

In another respect Major Eager's experience coincided with his own, namely, that cases which appeared to be so demented that they might readily be taken for dementia præcox, did recover completely. Many of those present who saw such cases might think they were entirely irrecoverable, but eventually they did get quite well.

With regard to Major Eager's reference to exhaustion psychosis, he would like to know whether that gentleman regarded this psychosis as really due to exhaustion. These cases were so diagnosed when possibly most of them had some psychopathic constitutional tendency.

Dr. Prideaux had made reference to hypnotism in the treatment of these cases. He, Col. Mott, had not preached hypnotism; he preferred to arrive at the result he wanted by means of counter-suggestion and other methods than hypnotism. Whether success or otherwise was attained depended entirely on the personality of the individual and the interest he took in the work. No doubt hypnotism, when practised by a strong personality, would give good results, just as others obtained favourable ones by counter-suggestion.

Prof. MARINESCO (of Bucharest) gave a microscopic demonstration.

IRISH DIVISION.

THE SPRING MEETING of the Irish Division was held at the Stewart Institution on Thursday, April 4th, by the kind invitation of Dr. Rainsford.

Members present: Dr. Drapes, Dr. Nolan, Dr. J. O'C. Donelan, Dr. Redington, Dr. Gavan, Dr. Mills, Dr. D'Arcy Benson, Dr. Rutherford, Dr. Costello, Dr. Leeper (Hon. Secretary).

Dr. Nolan having been moved to the chair,

Letters of apology for unavoidable absence were received from Dr. Hetherington, of Londonderry, and Dr. T. A. Greene, of Carlow.

Letters of thanks for the expression of sympathy from the members of the Irish Division were received from Mrs. Graham, widow, and also from Dr. Samuel Graham, of Antrim Asylum, on the part of the relatives, of the late Dr. W. Graham, of Purdysburn House, Belfast.

A letter was read from Dr. Cole, Hon. Secretary Parliamentary Committee of the Association, stating that a Sub-Committee to consider amendments of the English Lunacy Law was appointed, and, at the meeting of the Parliamentary Committee on February 21st, Dr. Cole was directed to write to the Divisional Secretaries in Scotland and Ireland to suggest that, if the Division deemed it expedient, members of the Parliamentary Committee in their respective divisions might be formed into committees to consider the promotion of changes in lunacy legislation in their countries, such committees to have the power of co-opting others interested in the subject and to be deemed Sub-Committees of the Parliamentary Committee, to which Committee they would in due course report. The Chairman stated that this was a most important letter and one in which most of the members in happier and more settled times would be keenly interested. Dr. Rainsford and Dr. Drapes also stated that they were much interested in the matter, and upon some discussion the Hon. Secretary was directed to place the matter on the Agenda as a primary subject for the consideration of the Irish Division at the next meeting in July.

The Meeting next proceeded to elect an Hon. Secretary and two Representative Members of Council for the ensuing year.

On a ballot being taken, the CHAIRMAN announced that Dr. Leeper had been elected Hon. Secretary, and Dr. Mills, of Ballinasloe, and Dr. Nolan, of Downpatrick, had been elected as Representative Members of Council for the ensuing year. Dr. Rainsford and Dr. Gavin were elected Examiners for the Certificate of the Association in Mental Diseases.

The following dates of meetings were fixed for ensuing year:

Autumn Meeting: Thursday, November 7th, 1918.

Spring Meeting: Thursday, April 3rd, 1918.

Summer Meeting: Thursday, July 3rd, 1918.

It was decided to accept the kind invitation of Dr. Nolan to hold the Summer Meeting of the "Irish Division" at Downpatrick on July 4th.

Dr. RAINSFORD next read his communication on "A Review of the Admissions

of Imbeciles of the Mongolian Type during the last Twenty Years," and exhibited several most interesting cases showing the physical and mental symptoms of this condition.

A REVIEW OF THE CASES OF MONGOLIAN IMBECILITY ADMITTED TO THE STEWART INSTITUTION DURING THE PAST TWENTY YEARS.

THE subject of Mongolian imbecility is one that has always greatly interested me. Possibly the fact that I know so little about it has been one of the causes for this interest; at the same time one recognises that there must be some well ascertained cause—could we but find it—which results in producing a class of cases possessing such well-marked features and easily recognisable. Dr. Shuttleworth, in a paper on this subject, read before the British Medical Association in Belfast, 1909, bases his account of the affection on a study of about 350 cases seen by him in the course of an extensive experience in this speciality.

His description of the type is very clear. He says: "Without going so far as to adopt Dr. Langdon Down's theory of retrogression of ethnic type in such cases, I think we shall admit, looking at the photographs of children now commonly designated Mongoloid or Mongolian imbeciles, that though by birth members of the Caucasian (or Indo-European) family they favour in a remarkable way the features of the Mongolian race." He adds that though so designated they show striking divergences from the real Mongol or Kalmuck. In the Mongoloid, the face, though broad, has not the same prominence of cheek-bones; the hair is not usually black as in the real Mongol, though straight, wiry, and often scanty; the obliquely placed and often almond-shaped palpebral fissures, with upward and outward trend and usually far apart, the flat-bridged snub-nose, with expanded outward turned alæ-nasi, and the tendency to epicanthic folds, are the most noticeable signs of similarity. Marked flattening of the occipital region is an almost constant feature.

The shape and appearance of the hands is most characteristic; shortened, club-shaped fingers, generally blue; hand rather square and stumpy; and some observers have described an incurvation of the little finger, and sometimes relative shortness of thumb and little finger.

As regards the general appearance, the most striking feature is the strong family resemblance in the cases. I have nearly always been able, in the case of each new Mongolian admission, to see a well-marked likeness to some case or cases admitted previously, and in the photographs which I have seen in various monographs on the subject I could almost imagine that cases under my care had been taken as illustrations.

Next to the face and hands, the appearance of the tongue is most characteristic. It may be described as always large, sometimes apparently too big for the mouth, venous coloured, with marked transverse or irregular fissures, and hypertrophy of the circumvallate papillæ. So general is this, that it may be said to be pathognomonic of the fully developed Mongolian type. Deformities of palate are frequently, if not invariably, present. Dr. Fennell says the deformity he found most marked among his cases was that of a contracted vault, with the sides sloping more steeply in front, so that an anterior plateau is formed, usually, but not always ridged, on the median line.

The circulation is always defective, and the clubbing of the fingers and toes with the general cyanosed appearance points to venous engorgement dependent upon some central circulatory defect. Hence such cases are always prone to severe chilblains, and the extremities are always cold. So frequent is this here that we invariably treat all bad cases of chilblain of feet in these cases by rest in bed, the foot of the bedstead being raised on blocks, and we find that in this way the affection is speedily cured.

I have never had an opportunity—much as I have desired it—of performing a *post-mortem* on a Mongolian case. All the appearances would lead me to say that there must be some congenital valvular defect in the heart, most likely on the right side. Dr. Fennell records 3 cases of congenital heart deformity, and cases of patent foramen ovale, and defects in the interventricular septum have been described. The thymus and thyroid glands have not, as a rule, been found abnormal.

As regards the frequency with which this type is found, it is stated that in England 5 *per cent.* of all imbeciles are of this type. My record comprises about 30 cases out of all admissions (355) since 1898, a percentage of almost 8.5 *per cent.* It is said to be more common in England than in the other European countries, as in France. Among 650 children in industrial institutions only 8 were Mongols; in Germany the proportion is about 1 *per cent.*, and an eminent Italian authority states that he had seen only 20 cases in Italy in seven years.

I have not been able to ascertain from inquiry much that would help to elucidate the causation of this peculiar condition. A history of tuberculosis is most uncommon, and most of my cases have been members of a family, the other members of which have been strong and healthy, and of healthy parentage. I do not think premature birth is an important factor, nor has syphilis much bearing on the condition.

The general opinion from study of the cases by various experts seems to be that they are essentially "unfinished" children, and that their peculiar appearance is really a phase of "fœtal life." Dr. John Thomson has termed them fittingly "ill-finished," pointing out that something goes wrong in their early intra-uterine life, probably as early as the second month. Dr. Shuttleworth lays down (1) That the outstanding point is the advanced age of the mother at the birth of the child. (2) They are frequently the last born often of a long family, and that exhaustion by a long series of previous pregnancies is an important factor in causation. (3) That any depressive toxic influences may, in younger women, produce reproductive exhaustion. In fine, that the Mongolian child is brought into the world at a stage of fœtal growth below normal, and that his remarkable facial and other peculiarities are the result of this.

It is well to remember that there are undoubtedly degrees of Mongolianism, and that one must be prepared from an experience of the type to say how much or how little of such type any given case shows. This is important from the point of view of prognosis. For though some writers record cases as living to fairly advanced years, and being so developed by educational training as to be able to hold their own with the more normal members of the community, our experience here shows that few—if any—are capable of much development, can seldom do any work except of the lightest character, and seldom live beyond twenty-one years. At the same time, viewed from the mental standpoint, they are by no means the worst class of case we admit. Almost all of them possess speech, though their voices are commonly characteristically husky; they can answer simple questions, tell their names and where they come from, carry out simple directions, attend to their own wants, and do not, as a rule, demand much attendance. They have, as a rule, a musical instinct, drill and class-singing appeal to them strongly. Dr. Fennell describes them finely as children of much promise but small performance. They are never physically robust, and so are not able for any hard outdoor work, but in some cases we have found them useful for light housework, and they can run messages, and even help to look after the feeble members of the flock.

With reference to my own cases, I find that I have admitted in the last twenty years 30 cases of Mongolian imbecility out of a total admission of 355. Therefore, 8.5 *per cent.* of the total admissions were of this type. This is a higher percentage than is generally noticed by most observers. Of my 30 cases, 19 were male and 11 female, and there certainly does seem to be a larger proportion of this type among the male inmates. Of the 30 thus admitted, 4—3 males and 1 female—are still in residence here, and you will see them to-day. Of the other 26, 17 died in the institution, the causes of death being pulmonary tuberculosis, 3; bronchitis or broncho-pneumonia, 10; 2 died of tuberculous meningitis, 1 of meningitis from middle-ear disease, and 1 of heart disease. Of the remaining 9, 2 were removed home, dying of tuberculous peritonitis; 1 in a very feeble state, with feet gangrenous, the mother refusing consent to any operation; 2 taken home in last stage of pulmonary tuberculosis; 2 were removed in feeble health without any very marked lesion; 2 only went home in tolerably good health, and are, as far as I know, alive. Of the 17 deaths, the average age at death was 13½ years, and average duration of residence 35½ months, almost exactly three years.

The most dangerous time of the year for these cases is undoubtedly the first three months. The harsh north and east winds seem to try their vitality severely,

and when they get bronchitis it is nearly always fatal. The form most usual is either capillary bronchitis or broncho-pneumonia, and no treatment seems to have the least beneficial effect.

It is remarkable that, as far as I can remember, not one of these 30 cases was an epileptic, and I think epilepsy is not common among the Mongolians. None of them suffered from any form of paralysis, and, though some of them walked feebly, it was rather due to general weakness than to any deformity.

I think you will agree with me in saying that when called to see any such type of case a guarded prognosis should be given, and it is to my mind most unlikely that any well marked case will live beyond twenty years of age. They require moderate exercise, mild but nourishing diet, and plenty of warm clothing. They should be kept during winter months in warm surroundings, and never be allowed out in very cold weather. As I have mentioned, they suffer severely from chilblains on both hands and feet. These extremities should, therefore, be kept well warmed, and if the feet get particularly bad, the chilblains having broken, they are best treated in bed, the foot of the bedstead being raised on blocks to help the venous circulation. I should mention I never found thyroid treatment of the least benefit.

The members freely discussed Dr. Rainsford's most interesting paper, and it was stated that the large numbers of Mongolian idiots observed and treated at the Stewart Institution were interesting and might be explained by the unique position of the place as receiving the patients from all over the country, there being no similar institution existing in Ireland.

The CHAIRMAN next asked the permission of the meeting to bring forward a matter of urgency that had arisen in connection with the unrest and recent conduct of the attendants in certain Irish District asylums.

A Resolution, proposed by Dr. REDINGTON and seconded by Dr. MILLS, expressing the cordial thanks of the meeting to Dr. Rainsford for his interesting paper and for his kindness and hospitality, terminated the proceedings.

NORTHERN AND MIDLAND DIVISION.

THE SPRING MEETING of the Northern and Midland Division was held, by the kind invitation of Dr. Cowen, at the County Asylum, Rainhill, Lancashire, on Thursday, April 18th, 1918.

In the absence of Dr. Cowen, who was unfortunately ill, Lt.-Col. E. White, was voted to the chair and presided.

The following thirteen members were present: Drs. R. Eager, Major, R.A.M.C.; B. Hart, R.A.M.C.; P. D. Hunter, Lt., R.A.M.C.; N. Lavers, Lt., R.A.M.C.; E. Mapother, Capt., R.A.M.C.; S. Edgar Martin, Capt., R.A.M.C.; E. Montgomery, Capt., R.A.M.C.; O. P. Napier Pearn, Capt., R.A.M.C.; E. F. Reeve; C. T. Street; G. A. Watson; E. W. White, Lt.-Col., R.A.M.C.; T. S. Adair; and three visitors—Capt. Benson Evans, R.A.M.C., Major Geoffrey Ramsbottom, R.A.M.C., and Dr. F. W. Thurnam. A number of apologies for non-attendance were received.

(1) The Minutes of the last meeting were read and confirmed.

(2) A ballot was taken for Wilfred Winnall Horton, M.D. Edin., Medical Superintendent, Wye House Asylum, Buxton, recommended by Drs. Legge, F. W. Mott, and T. S. Adair as an ordinary member of the Association, and he was unanimously elected.

(3) Dr. T. Stewart Adair was re-elected Secretary to the Division.

(4) Dr. J. W. Geddes and Dr. H. J. Mackenzie were elected Representative Members of Council.

(5) The arrangement for the Autumn Meeting was left to the Secretary, and the kind invitation of Dr. Geddes to hold the Spring Meeting, 1919, at Middlesbrough was cordially accepted. Dr. Street kindly offered to see what he could do for the Autumn Meeting at Haydock Lodge.

(6) Major Eager, R.A.M.C., then read a paper entitled, "A Record of the First Twelve Months' Admissions to the Mental Section of the Lord Derby War Hospital." The paper, though somewhat lengthy, was very interesting, and showed by statistical figures the movement of the cases admitted, as well as the percentages

of the various forms of insanity involved. The paper was illustrated by the description of a large number of typical cases.

(7) Dr. G. A. Watson read a paper by Dr. Cowen and himself on "Pellagra." He gave an outline of the disease as met with in asylums, with particular reference to cases that had occurred at Rainhill, and illustrated it with a large number of lantern slides and photographs. The pathological changes in the cerebral cortex were particularly well indicated.

Unfortunately the meeting had to come to a close before the whole of the programme could be got through.

A very interesting demonstration was given by Dr. Watson in the laboratory and museum in the forenoon.

A hearty vote of thanks was accorded Dr. Cowen for his kind hospitality, and sympathy expressed with him in his present illness.

EXAMINATION FOR NURSING CERTIFICATE.

FINAL EXAMINATION, NOVEMBER, 1917.

List of Questions.

1. Describe the sympathetic nervous system. What function does it perform?
2. Explain the following terms as applied to a fracture: (a) Simple. (b) Compound. (c) Comminuted. (d) Impacted. (e) Complicated.
3. What are the chief waste materials of the body, and what organs are concerned in their removal?
4. What symptoms would lead you to suppose that a patient might be suffering from pulmonary tuberculosis? Describe the precautions which should be taken to prevent the spread of the disease.
5. State the important points to be observed on the admission of a patient to an asylum.
6. How would you manage a patient suffering from delirium tremens?
7. State what is meant by the terms—(a) Obsession. (b) Hallucination. (c) Illusion. Give examples of each.
8. Describe in detail the various stages of an epileptic fit. What mental changes may occur in an epileptic patient before the onset of a fit?

PRELIMINARY EXAMINATION, NOVEMBER, 1917.

List of Questions.

1. Describe the symptoms and treatment of—(1) A fracture. (2) A dislocation. (3) A sprain.
2. Name and give the position of the cranial bones.
3. What is meant by voluntary and involuntary muscle? Give an example of each.
4. (a) To what class of poisons does belladonna, vitriol, strychnine belong? (b) State signs and symptoms of a poisonous dose in each instance.
5. State the differences in the character of the blood of, and manner of bleeding from, a freshly-cut vein and artery.
6. How do you differentiate between an apoplectic and a fainting fit? What treatment would you adopt in each case?
7. Give a list of the functions of the skin; describe in full how the skin assists in regulating the temperature.
8. Describe some of the difficulties in ventilating an asylum day-room as compared with an ordinary sitting-room.

List of Successful Candidates.

FINAL EXAMINATION, NOVEMBER, 1917.

Denbigh.—Robert Smith, John Davies.

Essex, Brentwood.—Laura Louisa Parsons, Ethel Rose Pickett, Elizabeth L. Rheinlander, Alice Emily Redman.

- Barming Heath*.—Ada F. Wratten, Annie M. Franklin (distinction), Ethel Gould.
- West Sussex*.—Kate A. Charles, Olive G. Williams, Joseph T. Nicholson, Edward Betts.
- Cheddleton*.—Archer William Sunderland, Gwladys Jones, Sophie Louise Grey.
- Stafford*.—Jessie Woodfin (distinction).
- Derby Borough*.—Lucy Griffin (distinction), Mildred A. Coulson, Norah May Murrell.
- Leicester Borough*.—Catherine Theresa Lavin, Florence E. Ecob, Martha E. Loane.
- Norwich City*.—Jessie A. Holmes, Florence M. Palmer, Caroline E. Smith.
- Bethlem*.—Edith Earls, Violet A. Birks.
- Camberwell House*.—Grace E. Luckhurst, Emma M. Harden, Margaret Stephens.
- Retreat, York*.—Jessie Scott Macgregor, Edith Kelly, Rachel A. Morley, Dorothy Bumby (distinction), Aileen D. Hume, Isabella M. Huggard, Frances Newton (from Bootham).
- St. Andrew's*.—Andrew Short.
- Pietermaritzburg*.—Eleanor M. Richardson (distinction).
- Federated Malay*.—Mutta Kannapathippillai, Hilda May Joseph.
- Aberdeen Royal*.—Isabella A. M. Shand (distinction), Mary D. Taylor, Caroline M. Lorimer, Williamina Taylor, Jessie Craig, Flora Pirie.
- Aberdeen District*.—Charlotte B. Sherriffs, John Smith, Jane A. G. Connon.
- Edinburgh Royal*.—Mary A. Duncan.
- Fife and Kinross*.—Annie J. McIntosh, Jessie Nicoll (distinction), Mary C. Fraser, Andrew Paterson.
- Gartloch*.—Christina Neill, Agnes E. Anderson, Annie Milne, Daniel Kelly.
- Inverness*.—Beatrice E. Montgomery.
- Lanark*.—Flora McD. Baillie.
- Melrose*.—Peter Sinclair.
- Murray*.—Margaret Henderson, Mary J. Meldrum.
- Montrose*.—Jessie G. Paton.
- Hawkhead*.—Elizabeth Lyon Alexander, Annie N. Gilmour, Ida R. List.
- Stirling District*.—Edith B. Roberts, Hugh McBride (distinction), Mary Anna Clark (distinction).
- Larbert Institution*.—Catherine Bryden, Isobel Taylor.
- St. Patrick's*.—Sarah M. McCready, Margarite C. Nugent.
- Richmond*.—Patrick Hall, Henry Nugent, Margaret McGloin, Jane Keogh, Margaret Clarke.
- Londonderry*.—Susanna Collins.
- Portrane*.—Caroline S. Noble.
- Omagh*.—Rebecca Morrow, Andrew Stevenson, Thomas Gavin.
- Warwick*.—Rose Goodall, Edith Annie Smith, Katherine Aitken (distinction).
- Smithston*.—Jane Mackinnon.
- Farnham*.—Martha Atwell (distinction).
- Valkenberg*.—Mabel E. G. Hawksley.
- Bloemfontein*.—Agnes Jane Christie.
- Grahamstown*.—Katrina Phillippina Terblanche.
- Fort Beaufort*.—Charlotte Gilson, Anna Terblanche (distinction).

PRELIMINARY EXAMINATION, NOVEMBER, 1917.

- Macclesfield, Chester*.—Mary Kate Lyne, Bridget McMullin, Winifred Green, Bertha Leech, Annie James, Ella A. G. Chambers, Minnie Wigglesworth, Amy Rose.
- Cornwall*.—Mary C. Collins, Ida L. M. Runnalls, Eva Bray, Mary Kent, Kathleen Mitton, Eleanor L. Cooksley, Lottie Harris.
- Denbigh*.—Jannet Mary Roberts.
- Barming Heath, Kent*.—Edith F. Broad, Hilda E. Wells, Wilhelmina Kavanagh, Florence Marie Wise, Dorothy Hamblin, Ella Ansell, Alice A. Hickmott, Hannah E. Hadingue.
- Bexley, London*.—Amy Francis, Annie E. Mitchell, Maggie M. Strappini, Marion Lynch, Florence Carline, Emily Punchard, Nellie K. Brazier, Violet A. Spratley,

Margaret Millar, Margaret Lucey, Annie R. Morgan, Elizabeth M. A. Allen, Helena Keenan, Mabel G. Shove.

Notts County.—Edith M. Patrick, Sylvia Till.

Cheddleton, Staffs.—Eliza Jane McGarry, Patricia P. J. Glynn.

Chichester, West Sussex.—Winifred M. Taylor, Dorothy E. Hempstead, Eva O. T. Clack.

Leicester Borough.—Mabel Wakefield, Mary J. Shannon, Dora K. Bannister, Elizabeth Ridgway, Isabella C. Johnston.

Norwich City.—Winifred A. Mayes, Alice F. Martin.

Camberwell House.—Miriam Bosworth, Muriel B. McFarland, Anna L. Stewart, Margaret Noble.

Coton Hill.—Mary Vincent, Katherine C. Hutchinson.

St. Andrew's.—James P. O'Hickey.

Retreat.—Albert C. Hart, Henry W. Hart, Marie Gracie, Edith M. Sumner.

Fenstanton.—Eva M. Dufferin.

Aberdeen Royal.—Williamina Burr, Isabella Roy Anderson.

Aberdeen District.—Barbara West, Florence Stephen, Mary A. Thomson, Jane S. K. Sangster, Jessie S. Roy, Leslie D. Duncan.

Edinburgh Royal.—Margaret Livingstone, Henrietta G. Bell, Margaret A. Finnie, Isabella Fowler, Jeanie C. Stewart, Mary A. Cormack.

Fife and Kinross.—Angusina M. Rhind, Agnes Cromar, Agnes G. Robertson, Catherine F. Wilson, Jessie Taylor, Esther Stark.

Gartloch.—Christina A. Macrae, Elizabeth Wilkinson, Marion Macaulay, Elizabeth Glen Dinning, Jessie Morrison, Elizabeth C. Walker, Elizabeth Ewing, Annie Mackie.

Woodilee.—Peggie McInnes, Isabella E. C. McLaren, Margaret M. Martin.

Inverness.—Christina Graham, Helen Morrison, Clara Walton, Isabella Smith.

Hartwood.—Thomas F. Vincent, Frances Scott Graham, Annie M. Thomson, Elizabeth Donaldson, Mary Rowan, Marjory C. Gordon, Helen Murray, Claire B. Clarke, Bella Cobban.

Melrose.—Jane Provan, Joan Mathieson Macrae, Lily Grant, Agnes McK. Donnelly.

Montrose.—Christina Campbell, Mitchell R. Home, Freda Corner, Matilda N. McGuthrie, Edith Potter, Annie Clark, Annie Auchterlonie, Marion H. Mason.

Hawkhead.—Margaret McVicar, Mary F. Blackstock, Helen Ritchie, Jessie Geddes, Nan Glendenning, Florence Tomlin, Catherine Burns, Jane Nicolson.

Riccartsbar.—Elizabeth J. Dawson, Mary B. Morrow, William M. Gavigan, Joseph Hobson.

Stirling District.—Isabella W. Donnan, Annie O'Hara, Euphemia McLaren.

Larbert Institution.—Margaret M. Murray, Mary C. McLean, Robina Thomson.

Murray.—Isabella Cooper, Jessie Ferrier.

Londonderry.—Martha Boyd.

Omagh.—Albert D. Jones, James Mimnagh, James Jameson, Bridget Sweeney, Levina F. M. McAnulla, Edna Hamilton, Annie McAnulla, Catherine McCaffery, Isabella C. Service, Maggie Lynn, Catherine Kelly, Mary C. Morris, Catherine M. McCreery, Maria Hadden.

Richmond.—Mary Kiernan.

Portrane.—Henry Falkner.

St. Patrick's.—Margaret T. Gordon, Ellen L. Mills, Kathleen Soughley.

Warwick.—Gladys E. Griffin, Henrietta D. Mabbett, Maud Victoria Price, Maud Toogood, Jessica Smith, Katie Larkin.

Rainhill.—Nellie Grisby, Alice May Papineau, Jessie May Spooner, Nellie Woolhouse, Edith Ellen Unsworth, Nettie Annie Kirk, Ellen Woodward, Frances E. Howitt, Charles Poulteney, Isabella Smith.

Valkenberg.—William A. Hornbuckle.

Pietermaritzburg.—Margaret Lee.

Grahamstown.—Margaret Ann Jones, Katrina Francina Ooshuizen.

Fort Beaufort.—Ellen M. Begbie, Hester C. Botha.

NOTICES BY THE REGISTRAR.

Nursing Examinations.

Preliminary Monday, May 6th, 1918.
 Final Monday, May 13th, 1918.

Papers for Bronze Medal to reach Registrar before June 14th, 1918.

Examination for Certificate in Psychological Medicine will be held early in July, 1918.

OBITUARY.

WILLIAM JOSEPH SEWARD.

THE death of Dr. Seward on February 11th, 1918, came as an unexpected shock to his friends and colleagues in the work of caring for the insane, and although he had been in retirement owing to ill-health since 1911, the announcement of his death came to the writer of these lines as a special reminder of the strain and stress involved in the medical and administrative control of a great mental hospital, for such in the fullest sense was the Colney Hatch Asylum in the North of London.

Seward may be said to have devoted his life to the service of this Institution for he had worked in no other. He joined its staff in 1878 as a graduate of the London University, and he was proud to be one of its Bachelors of Medicine. Educated at University College Hospital, he was appointed to Colney Hatch immediately after completing house appointments at the Bristol Royal Infirmary, which gave him a valuable experience and a full practical knowledge of general medicine and surgery. His hospital appointments always stood him in good stead, for he was an able clinician and he never relinquished his medical interests, although of necessity these tended to be submerged in his official work by an almost overwhelming amount of compelling administrative details.

At Colney Hatch Seward was firstly the assistant to Mr. W. G. Marshall, whose reputation for personal devotion to his patients was a matter of notoriety to the older generation of asylum physicians; then later he became the assistant to Dr. Edgar Sheppard—of fame as the father of the Sub-Dean of the Chapels Royal—and one of the first Lecturers on Psychological Medicine at a London Medical School, *vis.*, King's College. In 1882, when barely 30 years of age, he succeeded Dr. Sheppard as the Medical Superintendent, and with his old chiefs he remained upon terms of intimate friendship to the end of their lives.

When the London County Council, with a new sense of public responsibility assumed the Government of the London (then the Middlesex) Asylums under the Local Government Act of 1890, Seward was appointed by them, upon the retirement of Mr. Marshall, to be the administrative medical head of the whole institution, taking over the care of both the male and female sections and thus abolishing what until then had been a dual control. The Chairman of that Committee was the present Member of Parliament for Hampstead, Mr. J. S. Fletcher, who takes much interest in public affairs. The reconstruction of so great an undertaking under one head was no easy task, and probably Seward was the only person who could have assumed this supreme direction for the Asylums Committee of the Council not only without friction but also with the full help and confidence of the governed—a task much more delicate and much more difficult than the responsibility of opening a new asylum, but Seward accomplished his work with efficiency and credit.

During his period of service in this Institution was inaugurated the After-Care Association for the rehabilitation into social life of those patients who had been discharged recovered; and the inspiring leadership of its founder, the Rev. Henry Hawkins, the Chaplain, was always a source of personal gratification to Seward. He continued throughout his life to take the deepest interest in the Society's welfare, as he also did in the Asylum Workers' Association of the Executive Committee, of which he was a member.

One great event cast a deep shadow upon Seward's life, and he never recovered from the shock. On January 23rd, 1903, a destructive fire occurred in the new wooden annexe, adjacent to the main buildings of Colney Hatch, which was

demolished in about an hour. In this fire fifty-one female patients lost their lives, and the rest were saved with difficulty. Under ordinary circumstances no calamity can possibly be more tragic nor more disastrous than a fire, even when every safeguard and every precaution are ready against its occurrence, but when such a catastrophe occurs in an institution in which there is a sense of helplessness among its peoples and a feeling of dependence on the part of those committed into one's charge, then the anguish inseparable from mental disease is added to the special claims of humanity, and these tend to intensify acutely the overwhelming sense of responsibility. This disaster weighed upon Seward like a black cloud and the tragedy was always before his mental vision, and it is not surprising that it permanently unnerved him, and some years later he was succeeded in the appointment of Medical Superintendent by his friend and assistant, Dr. S. J. Gilfillan.

The treatment of the insane under Seward's *régime* was always one of enlightened and disinterested progress, and the writer of this article is under the greatest obligation to the memory of his old chiefs, Marshall and Seward, for their high example, devotion, and attachment to their patients, whilst the welfare of the staff never escaped either of them. Alcohol, in the shape of beer, was abolished as an article of diet under Seward; the Turkish bath for restoring mental patients was first used there; organo-therapy was encouraged by him; and the aid of clinical pathology with the application of the microscope were all adjuncts in treatment which were of intense interest to Seward, and they continued to be aspects in the practice of medicine which engaged his leisure and retirement, for he was a frequent visitor at the meetings of the Royal Society of Medicine, of which he was a Fellow. Seward was an "intermediary" between the old school and the new research one first started in the London Asylums by Sir William J. Collins, K.C.V.O. Nothing was irksome to Seward, and his mind may be described as healthy in the best sense. He was a Mason, and a member of the London County Council Lodge. He was a keen angler, and was devoted to Norway where he used to fish, and to Switzerland where he made many walking tours. He liked a game of whist, and he was a real cricketer—preferring rather to play in a small match than to watch the great ones—although he was often seen at Lords.

He was fond of pictures and rarely missed an exhibition in Bond Street; he was devoted to his garden and he delighted in the cultivation of roses, whilst he derived great pleasure from the meetings of the Royal Horticultural Society.

He was not a great reader of literature, but he was exceedingly well versed in contemporary history, and he was a great lover of *The Field* and *The Times*—the latter he may be said to have read daily from cover to cover. He was fond of hearing some of the great preachers, and the writer and his family often met him at the Sunday afternoon services in Westminster Abbey.

Seward's mind was not that of the controversialist, indeed, he rather disliked debated questions, but he always expressed his opinions—which were well considered—both critically and fearlessly. His great charm was his complete detachment from bias—he had cultivated the bias of anti-bias more than any other man of the writer's acquaintance, and he was a most genial, well-informed and cheerful personality.

He always maintained the complete confidence and friendship of his Committee, as well as of their officials, and for Mr. H. F. Keene, their Clerk, he entertained a great regard. Seward, like Marshall, was never married.

It may be repeated that Seward has left an impression of unique charm upon those who were privileged to know him.

ROBERT ARMSTRONG-JONES.

WILLIAM RIDDELL WATSON.

To an Englishman, at any rate, the late Dr. Watson suggested the typical practitioner of Scottish fiction. Not that he wore his profession on his sleeve; for a stranger might have been in his company for a considerable time without discovering that he was a medical man; but that he showed that combination of humanity and scholarly tastes—if not scholarship—which is more common in his profession north than south of the Tweed. He must have been an ideal asylum

superintendent, because in him professional and official qualities were completely fused in personality, so that he could exercise his powers unperceived under the confidence that he inspired and invited as a man. To his capacity as a healer of bodies he added the contained moral sympathy and understanding that we associate with the priestly function, and in matters of administration he would act by influence rather than command.

Dr. Watson was born in Glasgow on November 1st, 1838. He studied medicine at Anderson's College, Glasgow, and Aberdeen University—at Marischal College, with its picturesque association with Dugald Dalgetty. While still a student Dr. Watson went two voyages as surgeon on a whaler, in one voyage passing beyond the 80th parallel of N. latitude. His experience of the whale-fishing and actual participation in such sports as polar bear hunting gave him a stock of interesting memories, and made him always eager to read the accounts of Arctic exploration. During his adventures he had one very narrow escape. Falling through thin ice into the water, his clothes at once froze to him, so that he had to be carried back to the ship.

Dr. Watson qualified L.R.C.S. Edin. in 1862, taking his L.R.C.P. a little later. His early training must have been of a kind which, to the lay mind, at any rate, had certain advantages, professional knowledge being gained, if not in actual practice, at least in the conditions of practice. In his student days regular phlebotomy was still performed, though it had disappeared by the time he qualified. He practised in his early years in Aberdeenshire, Northumberland, Wales, and Kirkcudbright, thus gaining a wide experience of local character. Then in 1869 he went as medical officer to a projected British agricultural colony in the Argentine. The project failed, but Dr. Watson never regretted the attempt, which enabled him to see a good deal of the Argentine and something of Brazil.

On his return he settled in Irvine, Ayrshire, where he had a large practice, till 1876, when he went to Glasgow to take a Poor Law appointment. In 1883 he became Medical Superintendent of Merryflatts Asylum, Govan, and in 1894 he was appointed Medical Superintendent of the new Govan District Asylum at Hawkhead. The design and organisation of this were practically his own, and during the next nineteen years his energies were entirely devoted to it. He retired in 1913, settling in London in order to be near his only son, who is Medical Officer at H.M. Prison, Wormwood Scrubbs.

Till within a few weeks of his death, which occurred on February 9th, Dr. Watson was apparently in excellent health. His mind to the last remained as active as ever, and he was as keenly interested in everything as a young man. At various times during a very busy life he had read widely, and he displayed a remarkable memory for what he had read. He would quote, for instance, the opinions and often the exact words of Gibbon, whom he had certainly not read for half a century. In later years he took a keen interest in folk-lore and the origin and development of religions. He had instinctively a very sound taste in letters, and during the last months of his life he read the novels of Jane Austen with the keenest relish. Though he was himself the kindest of men, he certainly had a very special liking for the subtler kinds of satire. It has been said that he had an eighteenth century mind; certainly the eighteenth century writers, from Swift and the *Spectator* to Jane Austen—who really was eighteenth century—were his favourites.

In his acquirements, and the unobtrusive use he made of them, Dr. Watson gave new point to the expression "the humanities." To one who was privileged to know him chiefly after his retirement he gave the impression of great wisdom and serenity, as if all within him had ripened. One did not need to be told of the confidence and affection he inspired in his patients and subordinates. All his life he was the adviser of all sorts of people, who constantly brought their troubles to him; yet nobody could have been further from seeking confidence, or offering advice, or displaying knowledge. In conversation he seemed to listen to, rather than express, opinion; his wisdom came out by the way; and the effect of talking to him was always a little humbling in the afterthought—that a man so full and ripe should have borne so patiently the crudities of smaller experience; but, above all, one always came away with the calmed and rested feeling of having sat for a while in mild sunlight. If an acquaintance may be permitted to touch on family matters, there was something particularly beautiful in the relationship between

Dr. Watson and his wife. It was almost impossible to think of them apart, and their keen sense of humour, and quick, unsparing exposure to onlookers of each other's alleged foibles, only confirmed the effect of unity. Certainly on the human side there could be no better example of the "good physician" than Dr. Watson.

DR. PERCY JOHN BAILY.

It is with great regret that we record the death of Dr. Percy John Baily, late Medical Superintendent of Hanwell Asylum. He came to Hanwell in November, 1888, and finally succeeded Dr. R. R. Alexander as Superintendent in 1905. His whole career as a Mental Specialist was thus spent at this asylum. He retired with a pension last November, but only lived to enjoy it a few months, dying on March 30th, at Bexhill-on-Sea, in his 57th year.

He was educated at Edinburgh University, where he qualified in 1883 M.B., C.M.Edin., with honours. He was for a time Assistant Demonstrator in Anatomy at that University, and then spent some years travelling as a Surgeon for the P. & O. Steamship Company. He visited India, China, and the Mediterranean, and was accustomed to tell many amusing anecdotes of his experiences. He remained a traveller almost to the end, and spent his holidays in Norway, Algiers, etc. His chief hobbies were photography, in which he was a true artist, horticulture, and the study of languages. Of a sympathetic nature, he was always ready to help anyone in trouble. We miss him at Hanwell both as a friend and a chief. He took a deep interest in the welfare of the patients, and spent much of his time in the wards helping them with sympathetic conversation. The education of the Staff was one of his leading interests. He lectured to the nurses for many years and was the author of a book on Nursing the Insane. The history and traditions of Hanwell were a source of unfailing interest to him, and he published a short account of the place, with a description of the instruments of restraint used prior to Dr. Conolly's superintendency.

Never in robust health, he had been in failing health for some time, and the anxieties of the constant changes rendered necessary by the war added to his indisposition. In May, 1917, he took his summer holiday, but the symptoms were in no way alleviated, and on his return in July, after several plucky attempts to resume his usual active life, he felt bound to resign. For all practical purposes it may be said that he died in harness.

The following appreciation of Dr. Baily is contributed by an old friend:

Dr. Baily was a man of quiet and reclusive habits which led him to avoid publicity of any sort. He had a strong and determined personality, which, combined with a kindly disposition and fairness of mind, ensured his success as a manager of a large asylum.

His views as regards the treatment of insanity and asylum administration were to a singular degree of the practical and common-sense variety; and without being rigidly conservative in his ideas, he had no sympathy with the ultra-modern psychiatric school, which betrays such astounding ignorance of the basic fact that mental hospitals are designed for the treatment of insane patients, and not for sane patients afflicted with disorders of mind. He was a great believer in sound mental hospital treatment for the victims of insanity, which calls to its aid all the resources of every branch of medicine, and, if necessary, of surgery.

His appointment to the superintendency of Hanwell by the Asylums Committee of the London County Council was a popular and, under the circumstances, a very wise measure. The asylum has great traditions, and is one of the most famous in the world. Both structurally, and to some extent administratively, while splendidly effective, it retained its links with an older school. Any hasty or revolutionary changes would have been a desecration, and much of the solid good work achieved there would have been upset without any real advance being made.

Dr. Baily was always cheerful, thoroughly methodical in his work, a great upholder of orderliness and punctuality in all things, and was justly proud of his intimate knowledge of all his patients.

As a pastime for spare moments he delighted in photography, with all the *technique* of which he was completely familiar. The fine enlargements he made

won general admiration, and will be remembered by many. He had a disability affecting one of his legs, which gave him a characteristic gait. His footsteps, which could never be mistaken, will long echo in the ears of the inhabitants of Hanwell, and the memories of a kindly and charming gentleman who so ably ruled its destinies are not likely soon to fade.

Dr. Baily married in June, 1910, Ada Janet, youngest daughter of Joseph Kearns, who was devoted to him, and nursed him tenderly through his long and painful illness.

J. R. L.

NOTICE TO CONTRIBUTORS.

N.B.—The Editors will be glad to receive contributions of interest, clinical records, etc., from any members who can find time to write (whether these have been read at meetings or not) for publication in the Journal. They will also feel obliged if contributors will send in their papers at as early a date in each quarter as possible.

Writers are requested kindly to bear in mind that, according to LIX(a) of the Articles of Association, "all papers read at the Annual, General, or Divisional Meetings of the Association shall be the property of the Association, unless the author shall have previously obtained the written consent of the Editors to the contrary."

Papers read at Association Meetings should, therefore, not be published in other Journals without such sanction having been previously granted.

THE EDITORS regret that owing to the great shortage of paper the size of the Journal has to be reduced, the limit assigned being 96 pages, which, however, has been unavoidably exceeded. For the same reason the entire text has to be printed in small type.

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James Henry Pullen, the Genius of Earlswood.⁽¹⁾ By F. SANO, M.D.

"What could he think himself to be? 'Wuotan?' All men answered,
'Wuotan!'"—CARLYLE.

IN old times, when kings occasionally wanted to know the real opinion of their people, they asked their fool, and it has become a proverb that "fools tell the truth while laughing." But the court jester is not always an agreeable man, and it is also said that before he teaches you the maxim he "will annoy and pester." Thus we may suppose that these were of different kinds.

There is often a peculiar interest in the talk of the simple, as they see things from a realistic point of view, without any sort of that personal control which the complexity of influencing by reason develops: "Qui respiciunt ad pauca, de facili pronunciant." Some dwarfs have been famous not less by their degenerated conditions than by their uncommon and astonishing influence in court, due to their readiness to talk freely. They kept the attention of the most powerful rulers, and their fame was so great, that we still find in the museums portraits of them painted by the greatest masters, *e.g.*, Velasquez and Rubens.

A feature of their character, which seems always to have been a key to success, was their obstinacy. Nothing could disturb them from their fixed ideas, and when in a bad mood, no favour of their wealthy protectors could induce them to change their attitude.

Where kindness, politeness, obligingness and mutual confidence make social life agreeable, no open criticism nor "brutal frankness" can have its place, no perseverance can attain its final desire, unless very exceptional superiority prevails, which is not to be found in a microcephalic or in a hydrocephalic brain.

Such are some of the first thoughts which readily occur to the mind, when the object of this study is announced to be: *The Genius of the*

LXIV.

17

Royal Earlswood Institution for Feeble-minded at Redhill: But they can only in part be applied to the case.

It was not a synthetic wisdom nor shrewd remarks that could have made James Henry Pullen the subject of such world-wide interest, and attracted to him the favour of the late King of England's gracious attention; for Pullen was living in his egocentric preoccupations, and he hardly uttered more than a few words on his own behalf, as "very clever!" and "wonderful!" But these few words were said with such complete a confidence and so suggestive a power, that everybody who approached him repeated them with the same conviction. Thus "very clever" he was indeed, let me also say it, and "wonderful" his psychological success.

Having been impressed, as every child of five or six, by the small ships which his playmates tried to manoeuvre on narrow puddles along the roads of Dalston, his birthplace, he got the obsession of making by himself such toys, and he soon became skilled in carving ships and in reproducing them in pencil drawings. Until the age of fourteen he attended school, but always irregularly. Owing to his deafness and dumbness, he was left isolated, and henceforth followed his own mental way, growing original, egotistic, such as he remained for his whole long life, with an undoubtedly childish character.

Until he was seven years old he could only say "muvver," apparently for *mother*. He afterwards learned from his parents, brothers, and sisters some monosyllabic words concerning the products of his beloved occupations, and he later on knew just enough to write in a jealously-kept memorandum book the summary of the work he had accomplished, the number of the pieces used, and the estimated amount of pounds sterling he hoped to obtain by selling his so-called model-ships. Thus his vocabulary was very poor, and although he was considered by those who observed him for years as nearly normal in all his sensorial organs, with the exception of his ears, he never learned to read nor to write. He was sensitive to vibrations coming from the ground, and had arranged an alarm system in his workshop, based upon that sensibility, which made him aware of a coming visitor. His dumbness was commensurate with his deafness; he was unable to give any intelligible answer, unless he could accompany his broken words by gestures, and the few formulæ expressing his admiration for his own personality were acquired in his youth, and remained unchanged.

In his own diagrammatic history, a large drawing with forty scenes of his life, Pullen shows how he was resistive to school teaching in 1851. After the usual school hours the master tries to give him private lessons; but the boy weeps, and puts his head in his arms on the table, making any attempt to cheer him up ineffective. Two years later, with a smiling self-contented expression, he pays a visit to his old master, and gratifies

him with the presentation of a small model-ship, which the master will be proud to place on the mantelpiece! If Pullen had been simply affected by sense deprivation, would this have been the course of events? Did not Pullen show himself the strongest in the conflict of his individuality with the stereotyped pedagogy of his surroundings? Think of Helen Keller, deprived of sight and hearing, and yet able to acquire every kind of knowledge that ennobles human understanding. But Pullen! with both his eyes wide open to the bright world of London, and his skilled ten fingers under complete sense control, Pullen, even after having been busy for months in the printer's shop at Earlswood, could not absorb, digest, or exteriorise the most ordinary sentence of politeness. To say, "I am very much obliged to you, Sir," was strange to him in grammatical arrangement as well as in social meaning.

His admission into the Earlswood Institute at the age of fifteen gave him the opportunity of using better tools and of learning much in the carpenter's shop. It helped him in the performance of his model-work; it allowed him to use better material, to carve ivory, and to bring to childish perfection the mechanical details of his constructions. Earlswood, however, with its most excellent organisation and its experienced medical and pedagogical staff, could not make of him anything but an interesting case of psychiatry, a wandering curiosity in Surrey, an exceptional advertisement for the institution.

"He was obviously too childish," writes A. F. Tredgold, ⁽²⁾ in the extensive and interesting chapter he devotes to him in his valuable book on *Mental Deficiency*, "and at the same time too emotional, unstable, and lacking in mental balance to make any headway, or even to hold his own, in the outside world. Without someone to stage-manage him, his remarkable gifts would never suffice to supply him with the necessities of life, or, even if they did, he would speedily succumb to his utter want of ordinary prudence and foresight, and his defect of common sense" (p. 312).

But as to his tenacity in keeping his own directing idea through seventy-five years of conscious mental activity, it was as remarkable as successful. His originality was the result of his patience and perseverance. What made him famous was the realisation of a childish programme, remaining all through in its limited frame as originally conceived, but progressively renewed and completed with all the skill and the experience that memory and maturity of age could bring about.

He was allowed the privilege of a private workshop, and a special room in which his productions were exhibited. Both rooms are preserved and on view at the institution; they are worthy of the greatest attention, as they are an exceptional and typical exteriorisation of the mental and manual activity of such kind of men as Pullen was.

At the age of twenty-six he made his first representation of the

Universe, which he probably had long pondered over. It is a large barge, half as wide as it is long. There is a well-furnished room in the centre. White ivory angels are outside at the prow, and Satan (or Neptunus?) is at the stern. A centre-rod acts on twelve oars and forked lightning strikes the top of the construction. Thus there is partly traditional influence and partly genuine conception, the whole being a fine illustration as to how men are inclined to accumulate in one general synthesis their knowledge of the world, as they have perceived and conceived it. For Pullen the world could only be a ship. Mankind in its first principles believe alike, our hero yielded to egocentric, homocentric, and geocentric conceptions.

He was thirty-five years when he began his masterpiece, "The Great Eastern," a complicated model-ship, every piece of which was made by himself with the greatest patience. It took him more than seven years to complete it, and it was exhibited at the Fisheries Exhibition, where it obtained the medal, not as the most perfect production of its kind, but because every screw and every pulley had been made by the exhibitor himself. Thus the prize was won by the patience he had shown, but next to this patience was the inability to take advantage of others' skill and help. A normal individual would have obtained better results by co-operation and division of work. Pullen reached the goal by his best qualities, as well as by his worst defaults, but both were extreme, and they made him so exceptional that he was unanimously declared "superior."

He thought it possible to impress and frighten people by a giant mannequin, which he had erected in the middle of his workshop. Sitting inside this monster he could direct the movements of its arms and legs, and make a great noise through a concealed bugle fitted to the mouth of the giant. In this contrivance the attempt to cover personal weakness by frightfulness was already apparent, but his suspicious tendencies became evidently pathological and dangerous when he established a man-trap to kill every undesirable visitor who might try to enter his private workshop during his absence.

Besides his ships, he made book-cases, tables, and some small model-houses. During the time he had to remain in bed with a broken leg he made a number of good drawings, and he often began the same copy again with the same patience and accuracy, just as he made many of the same models of ships, without ever showing any sign of mental fatigue or lack of attention. He also executed a number of ivory carvings, and made brooches, dress-pins, and walking-sticks.

"His Majesty King Edward, when Prince of Wales, took great interest in him," writes Dr. Caldecott, Medical Superintendent of Earlswood, "and graciously sent him tusks of ivory to encourage him in producing his beautiful carvings. He was proud to show these



J. H. Pullen

FIG. 1.—J. H. PULLEN, IN HIS BEST TIME, WEARING ADMIRAL'S UNIFORM.

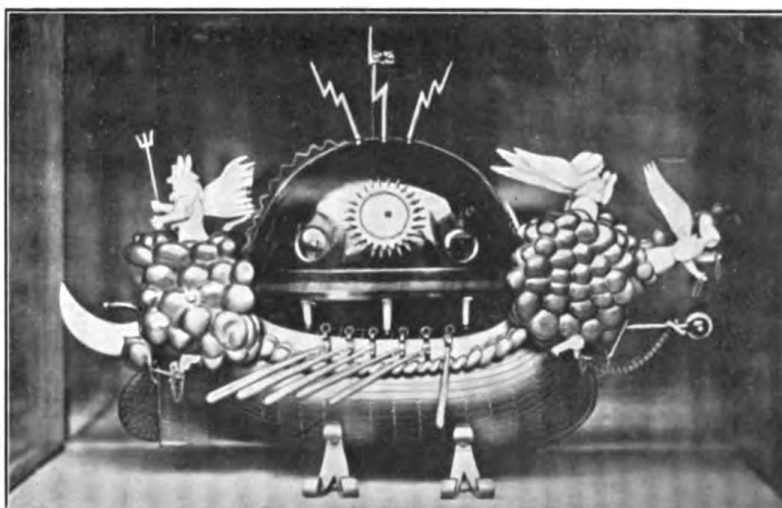


FIG. 2.—THE MYSTIC REPRESENTATION OF THE WORLD AS A SHIP,
BY J. H. PULLEN.

To illustrate paper by Dr. F. SANO.

Adlard & Son & West Newman, Ltd.

gifts, and, although imperfect speech limited his expression to 'Present, friend Wales,' it was evident he was conscious of the condescension of his august patron."

I have twice visited and carefully examined the workshop and the exhibition-room of Pullen, and I feel very much indebted to Dr. Caldecott and to Dr. Stephens for most of the information which I here recall in addition to what Dr. Tredgold has already published. The following note, which Dr. Stephens wrote on September 15th, 1913, may describe the decline of Pullen's glorious career :

"A very interesting case. He took me round his workshop to-day, and I spent three hours there, being shown besides his 'Giant,' and the excellent models of boats, kites, etc., his journal, carvings in wood and ivory, and the many intricate but thoroughly ineffectual 'man-traps' he had made to guard his treasures. He had the artist's pride and vanity in his works, coloured by a great childishness and simple faith in his unfailing capacity and genius. For he does not seem to realise that he is weekly growing more feeble, that he has lost his curious powers of inventiveness and design, and that now he needs must spend his days in the making of rough carvings in bone and ivory, infinitely inferior to the worst of his earlier work. He has the artist's sense of jealousy, for he would not let me touch or examine anything. I only may gaze from a respectful distance! and he told me confidently that just before he dies he intends to wreck and destroy everything that he has made."

It may be of interest to know what the people, living outside the asylum, thought of Pullen, who was allowed much freedom. I therefore interviewed some who knew him, and I had the following description from one, who being born and having resided for a long time at Redhill saw Pullen quite regularly about twenty-five and even thirty years ago :

"Everyone in the neighbourhood knew Pullen very well ; he liked to sell ivory pins and brooches for a shilling or so, although he never approached anybody with that purpose. He was proud, and often remarked that he belonged to a royal family. One spoke always to him in a simple manner as to a child, and more with signs than with words. His talk was broken and difficult to understand. He had a curious shape of head and usually wore a Scotch cap. He knew the value of money, and returned exactly the change for small amounts." He sometimes went for holidays on his own, and our informant, Mr. Hollmwood, remembers having seen him at Brighton as a self-respecting boarder.

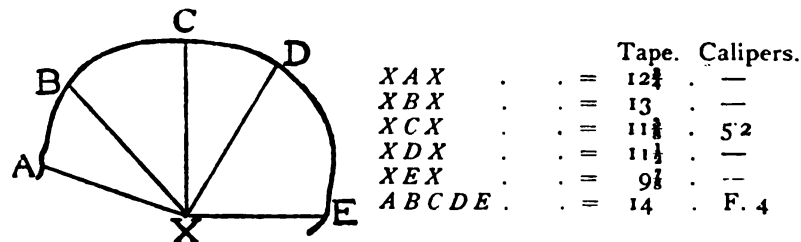
From Pullen's sister we know that the parents were first cousins ; thirteen children were born in the family, six of whom died in infancy. A brother was deaf and dumb, and was a fine drawer. He became maniacal, and died at Earlswood from cancer at the age of 35.

Pullen deceased May 31st, 1916. The *post-mortem* examination performed by Dr. Stephens on June 1st, revealed senile decay and a little pneumonia. The left testis was small, shrivelled, and fibrous; the right healthy. The condition of the left testicle was caused by a fall while at work, about fifteen years before death.

The brain was put in a 10 *per cent.* formalin solution, and later on forwarded by kind permission of Dr. Caldecott to the laboratory of the Maudsley Hospital. Col. F. W. Mott handed me the brain for examination, and I am very grateful for this confidence, which I have tried to justify by furnishing an accurate description.

Measurements.—On admission, Pullen was 5 ft. $7\frac{1}{2}$ in.; his weight was 9 st. 11 lb. The circumference of his head, $21\frac{1}{8}$ in.—when dead, the circumference was $22\frac{1}{8}$ in.

Measurements of the Cranium (according to Tredgold).



Index of capacity $3382\frac{7}{8}$ (Tredgold's method). Width of forehead $5\frac{1}{4}$; callipers 3.9. Tragus to glabella $6\frac{1}{4}$; callipers 5. Tragus to external occiput $4\frac{1}{4}$; callipers 4.4.

The auditory organ.—The temporal bones were removed, and both showed the same macroscopical external conditions. The right bone was decalcified, together with the bone of a normal (S. P—) and with that of a deaf-mute individual (H. A—). For this comparative examination I have taken the papers of Brouwer and Quix as a guide; until now, however, only the macroscopical examination could be performed on sections through the decalcified bones. They enabled me to give the following information. (See Table on p. 257.)

The bones of Pullen's skull were rather thin. The deaf-mute, H. A—, had thickened bones, as often occurs in deaf-mutism; neither of them had malformations in the middle ear. Pullen's external meatus and his middle ear were well developed, and, notwithstanding his old age, the tympanum was transparent and in fair condition. In both Pullen's and the deaf-mute's cases the internal ear showed a good condition of osseous development, the cochlea was of average dimensions, but the internal meatus of H. A— was shallow. The auditory nerve of H. A— was atrophied and thin.

The origin of deaf-mutism is very variable, and each case needs to be

examined for itself. In the case of H. A— the eighth nerve was atrophied, and the notes mentioned that the patient had had three fits (or convulsions?) at the age of one year. The brain was of normal weight (1360), but adolescent insanity developed at the age of 17. The patient remained demented, and died from recently acquired tuberculosis at the age of 38.

Measurements.	Normal, S. P.—	Pullen.	Deaf-mute, H. A.—	Quain's anatomy.
Age	67	81	38	—
Height	5 ft. 10 in.	5 ft. 7½ in.	5 ft. 6 in.	—
Thickness of the temporal bone at the junction of the squamous and petrous portions	mm. 4·0	mm. 4·0	mm. 9·0	mm. —
Opening of external auditory meatus at the osseous portion:				
Greatest diameter	9·0	10·0	8·0	8·67
Smallest diameter	8·0	6·0	5·5	6·07
Opening of meatus internus . .	3·0	3·0	2·0	—
Greatest development of meatus internus:				
Greatest diameter	7·0	6·5	4·0	—
Smallest diameter	5·8	4·5	2·5	—
Surelevation of the superior semicircular canal on the sur- face of the petrous bone, above the s. petrosus superior	8·0	5·0	5·0	—
Base of the cochlea	8·5	8·0	8·0	8·0
Height of the cochlea	5·5	5·0	5·0	5·0

In the case of Pullen no peripheral origin could be traced. There was evidence of a lack of cerebral development, as will be shown later on. A brother of Pullen was a deaf-mute; the parents were first cousins. The deaf-mutism of Pullen appears to have had a cortical origin.

General Examination of the Brain.

Upon opening the skull the membranes were not found adherent, and there was no excess of cerebro-spinal fluid. The brain was put in 10 per cent. formalin solution.

The brain is small, but the general appearance presented is that of a satisfactory convolutional pattern. There is marked arteriosclerosis and enlargement of the ventricles, in the cavities of which the central nuclei project.

The brain weights (November 14th, 1916), after 5½ months' hardening in formalin solution, were :

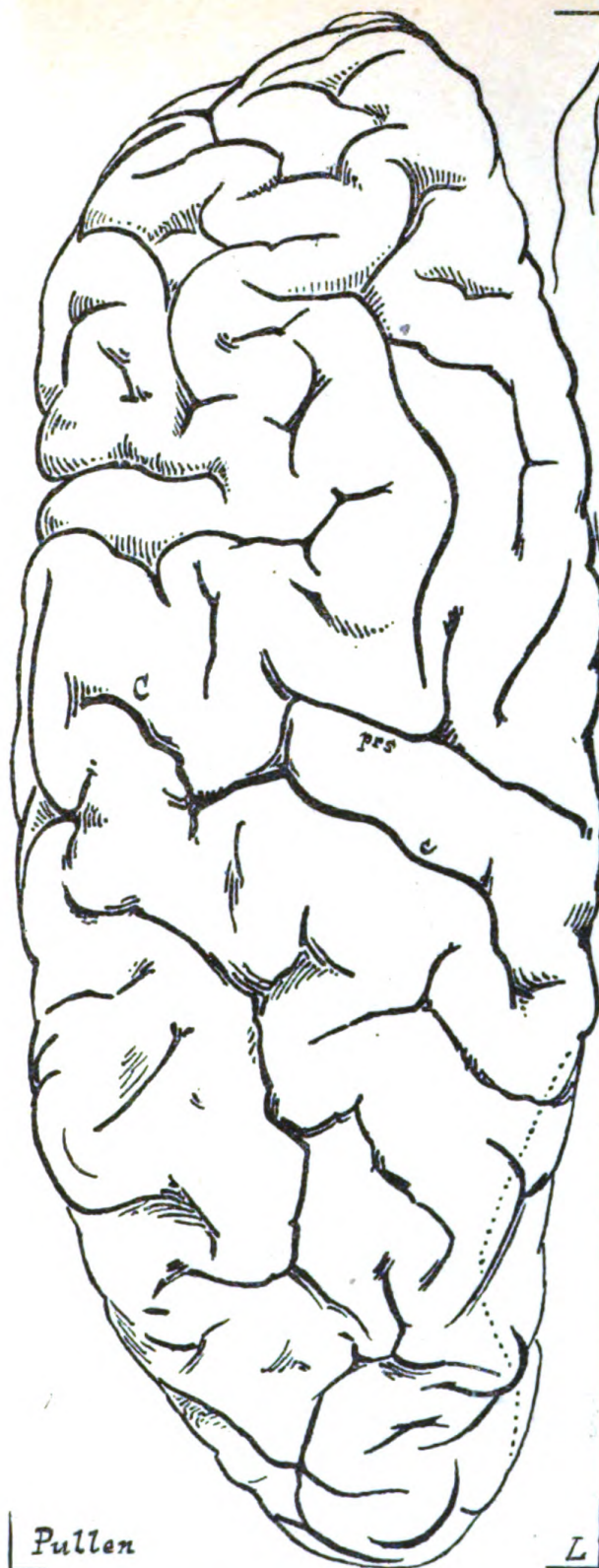
	Grammes.
Left hemisphere	520
Right hemisphere	525
Rhombencephalon	145 × 8 = 1160
Total	1190

The figures are probably a little higher than the original figures, as is the case during the first months of hardening in formalin solution. (Later on (August 4th, 1917) the weights of the hemispheres were 485, 475.) The negligible difference between right and left hemispheres and the figure obtained by multiplying the weight of the rhombencephalon by 8 show that the cerebellum had been arrested in its development in accordance with the lack of development of the hemispheres.

The brain had not been suspended in the fluid during the first period of hardening, and had been lying on its inferior surface, both hemispheres inclining towards the right side; exact measurements, therefore, could not be taken. The following results are given with this reservation, which especially applies to the questions marked with the asterisk (*).

TABLE A.—*Measurements according to the System of Cunningham and Spitzka.*

	In cm.		In per cent.	
	L.	R.	L.	R.
<i>Tape Measurements.</i>				
Maximum length of hemicerebrum	17.9	17.9	—	—
Maximum width of cerebrum(*)	13.8	—	—	—
Cerebral index	—	—	0.77	—
Maximum horizontal circumference	51.9	—	—	—
Maximum outer width of hemicerebrum(*)	6.7	7.1	—	—
Maximum occipito-temporal length(*)	18.2	18.2	—	—
Maximum length of callosum, and <i>per cent.</i>	8.5	—	0.47	—
Centro-temporal height (vertex to horizontal glass)(*)	8.2	9.8	—	—
Centro-olfactory height(*)	7.5	8.1	—	—
Supero-mesial border (Cunningham's method):				
From the cephalic point to the central sulcus (frontal index)	15.0	14.5	59.28	57.08
From the central sulcus to the occipital transverse (parietal index)	5.9	5.9	23.32	23.32
From the occipital transverse sulcus to the occipital pole (occipital index)	4.4	5.0	17.39	19.68
<i>Projection Measurements.</i>				
Lateral surface; from the cephalic point to:				
1. Tip of temporal lobe	4.4	4.4	24.58	24.58
2. Junction of sylvian and presylvian fissures	5.0	4.9	27.93	27.37
3. Ventral end of central sulcus	7.6	6.7	42.58	37.85
4. Junction of sylvian and episylvian fissures	11.3	9.5	63.12	53.07
5. Caudal point	17.9	17.9	1.00	1.00
Mesial surface; from the cephalic point to:				
6. Cephalic edge of callosum	3.2	3.2	17.87	17.87
7. Porta (foramen of Monro)	6.5	6.5	36.31	36.31
8. Dorsal end of central sulcus	11.0	10.2	61.50	56.98
9. Dorsal intersection of paracentral sulcus	11.8	11.0	65.92	61.50
10. Caudal edge of callosum	11.6	11.6	64.80	64.80
11. Occipito-calcarine junction	13.8	13.6	77.09	75.97
12. Dorsal intersection of occipital transverse sulcus	15.9	15.5	89.44	86.59

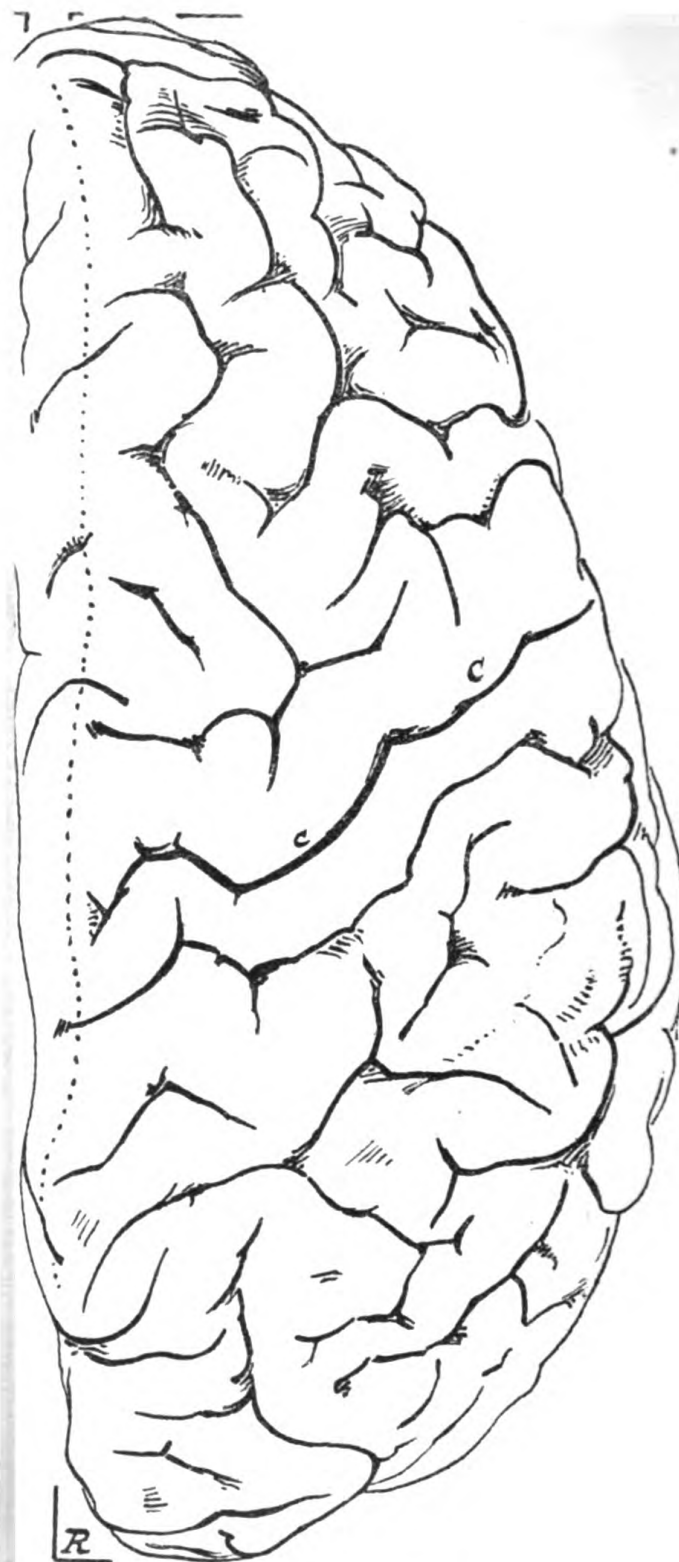


Pullen

L

FIG. 3.—SUPERIOR ASPECT OF THE BRAIN. Frontal pole up. Occipital pole down. L. Left hemisphere. *prs*. Sulcus praecentralis superior. The dotted line indicates that the central sulcus remains independent from the lateral mesial border. The central sulcus has no connection with the lateral mesial border on the left side in the cortical projection centre of the hemispheres is artificial and occurred during hardening.

To illustrate par



MAIN, PROJECTION DRAWING (ORTHOGONAL).

hemisphere. *R.* Right hemisphere. *C.* Central sulcus. *S.* indicates the supero-mesial border. On both sides the lateral fissure (Sylvian), and it does not cut the supero-mesial border on the right side, it has a connection with the *pr* of the right hand. The slight distortion shown by the drawing, the brain not having been suspended.

Prepared by Dr. F. SANO.

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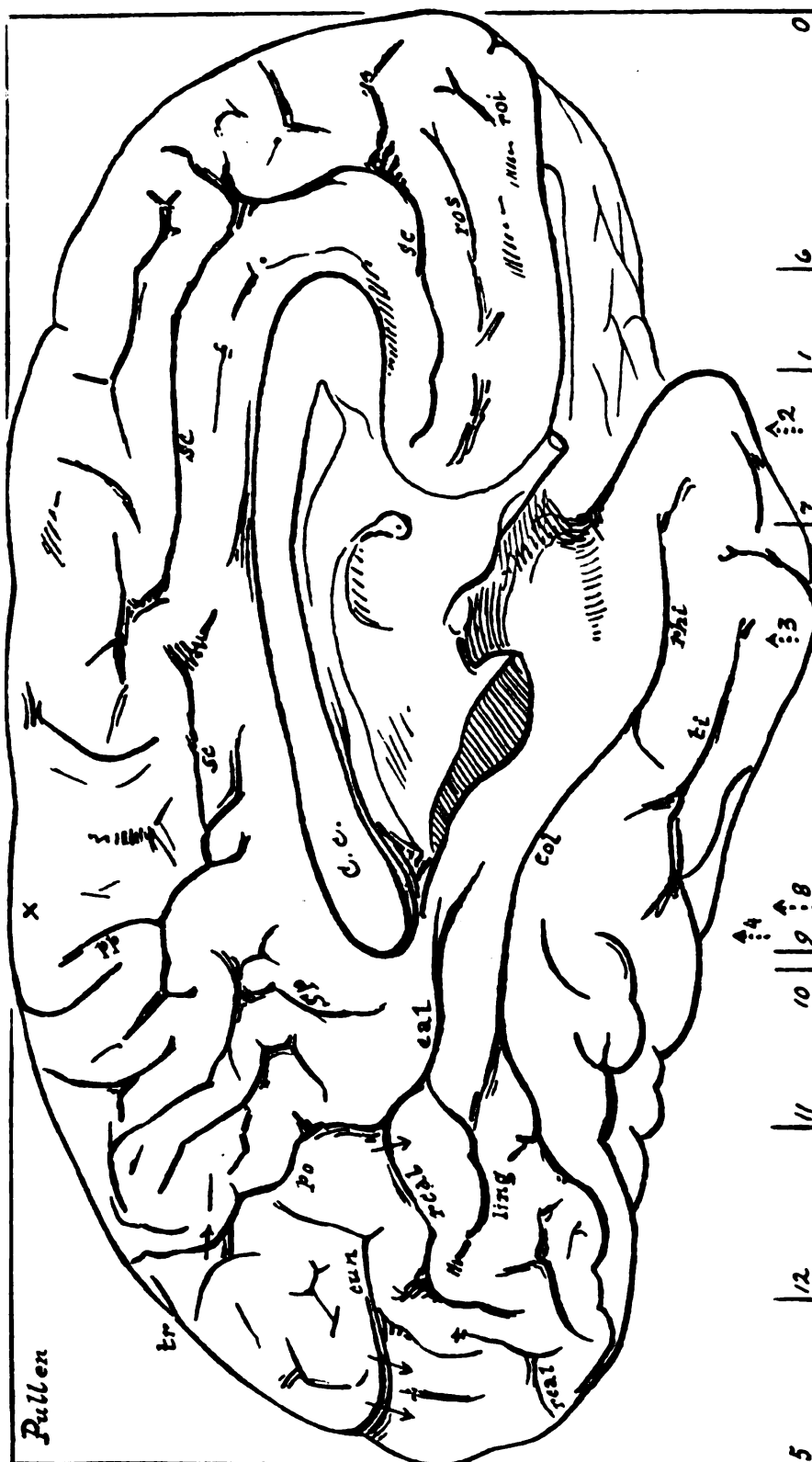


FIG. 4.—MESIAL ASPECT OF THE LEFT HEMISPHERE OF THE BRAIN. (*Natural size.*)

C.c. Corpus callosum. sc. Sulcus callosus. pp. Post paracentral end of sc. sp. Sulcus subparietalis. po. Fissura occipito parietalis. tr. Sulcus occipitalis transversus. cun. Sulcus cunei. cal. Fissura calcarina. rcal. Interrupted fissura retrocalcarina. ling. Sulcus lingualis. col. Sulcus collateralis. rhi. Sulcus rhinicus externus. ti. Sulcus temporalis inferior. ros. Sulcus rostralis superior. roi. Sulcus rostralis inferior. x. Corresponding to the end of the central sulcus on the lateral surface. Arrows crossing the sulci (—→) indicate deep gyri. Arrows and numbers on the lower part of the figure refer to the numbers of Table A. Corpus callosum well developed. Parietal (præcuneus) and occipital regions complex.

To illustrate paper by Dr. F. SANO.

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The Convolutional Pattern.

Fissura lateralis and sulcus centralis.—The posterior branch of the lateral fissure (f) measures on the left side 6.2 cm., on the right side 4.6; f has only one anterior ramus at the lateral surface on the left side, namely, the ascendant (ra), the horizontal ramus remaining at the concealed surface of the operculum orbitale. This operculum has no other indentations. The left posterior branch ends in a short ascending branch (rpa) and only an indication of the descending branch (rpd).

On the right side an independent sulcus, which does not join f , represents the anterior horizontal branch of f (rh); ra resembles the same sulcus of the left side. There are no other sulci on the opercula orbitale and frontale.

The central sulcus (c) reaches the superomesial border on both sides, but does not join it; c does not join the lateral fissure either, so that its end remains independent on both sides. At the left side c is joined by the superior precentral sulcus, but by no other sulcus, and at the right side c remains completely independent. On the left side c presents a well-indicated middle knee, but there is no superior knee. On the right side the superior knee is slightly indicated, but there is no middle knee. The right c has a more straight direction than the left c .

The sulci centrales are not deep; there are no concealed gyri; the usual buttress is of normal appearance.

Frontal lobes.—There is a good mesial sulcus (fms) on the right side; it is less developed on the left frontal line. The sulcus frontalis superior is more developed on the left side, but in neither does it join the superior precentral (prs) sulcus. The sulcus frontalis medius is better developed on the right side, and the sulcus frontalis inferior is interrupted on that side by three annectant gyri, which is not the case on the left side. The sulcus radiatus and the external piece of the sulcus fronto-marginalis have a common posterior ending on the right side; on the left side these two sulci are united in one sulcus of a very simple pattern. The frontal operculum is very simple. The convolutional pattern is certainly less complex on the left than on the right side. This is evident from a comparison of the mesial surfaces; the accessory sulci are regularly perpendicular to the sulcus cingulatus on the right side; they tend to be nearly parallel and not so deep on the left side.

The sulci orbitales are not similar on both sides, but it is difficult to say which side is the most developed.

Parietal lobes.—The sulcus postcentralis superior is separated from the sulcus postcentralis inferior in the left hemisphere, but these sulci join in the right; poi joins f on the right, but not on the left side.

The sulcus interparietalis proprius (ip) is interrupted on both sides

nearly in the same manner, but the interruption exists more posteriorly on the left. The connections with the postcentral sulci present two rather unusual types, the frequency of which, according to Retzius, is respectively 11 *per cent.* (left) and 4 *per cent.* (right); 19 *per cent.* and ? *per cent.* (Cunningham); 7 *per cent.* and 17 *per cent.* (in my series of lunatic brains). The second part of *ip* extends far behind, and joins *oa* on the left.

In both supramarginal gyri there is a special sulcus, which joins *fl*; on the right side it joins also *poi*.

There is an independent portion of the superior parietal sulcus on the right side.

TABLE B.—*Particulars concerning Fissure and Sulci.*

		L.	R.
<i>fl</i> and <i>c.</i>	1. Fissura lateralis, number of anterior rami	+	+
	2. Fissura lateralis, number of posterior rami	+	2
	3. } s. præcentralis superior	+	—
	4. } s. præcentralis inferior	—	—
	5. } Sulcus centralis anastomosis { s. postcentralis superior	—	—
	6. } with (+) { s. postcentralis inferior	—	—
	7. } s. subcentralis anterior	—	—
	8. } s. subcentralis posterior	—	—
	9. } fissura lateralis separately	—	—
	10. S. centralis cuts superomesial border	—	—
	11. } S. præcentralis superior (+) { s. præcentralis inferior	—	—
	12. } { s. frontalis superior	+	+
	13. S. præcentralis sup. divided into two sections	—	—
	14. S. præcentralis intermedius present	—	—
	15. } (s. frontalis superior	—	—
	16. } S. præcentralis inf. anasto- { s. frontalis inferior	+	—
	17. } mosis with (+) { fissura lateralis	—	—
	18. } { s. subcentralis anterior	—	—
	19. } { s. diagonalis	—	—
Frontal lobe.	20. Ramus horizontalis separate	+	—
	21. Ramus horizontalis + s. frontalis medius	—	—
	22. S. diagonalis well (+) or badly (—) developed	+	+
	23. S. frontalis superior, number of segments	3	1
	24. S. frontalis superior + s. frontalis medius	—	—
	25. S. frontalis mesialis well developed (+)	—	+
	26. S. frontalis medius well developed	+	+
	27. S. frontalis medius, number of sections	2	1
	28. S. frontalis inferior continuous	+	—
	29. S. frontalis inferior + s. diagonalis	+	—
	30. S. frontalis inferior + s. radiatus	—	—
	31. S. frontalis inferior + s. fronto-marginalis	—	—
	32. S. frontalis marginalis, number of sections	2	2
	33. S. rostralis superior well developed	+	+
	34. S. rostralis medius well developed	—	—
	35. S. rostralis inferior well developed	—	—
	36. S. rostralis transversus anterior joining <i>sc.</i> and border	—	—
	37. S. orbitalis sagittalis + s. orbitalis transversus	+	+
	38. S. orbitalis transversus, number of pieces	1	1
	39. S. olfactorius well developed	+	+
	40. S. olfactorius mesial (+) or lateral (—) direction	+	+

TABLE B (continued).

			L.	R.
Parietal lobe.	41.	S. postcentralis superior	—	+
	42.	(+)	—	—
	43.		—	—
	44.	S. postcentralis inferior	+	—
	45.	(+)	—	—
	46.	fissura lateralis	—	+
	47.	S. interparietalis proprius continuous	—	—
	48.	ramus ascendens s. temporalis superior	—	—
	49.	ramus ascendens s. temporalis medius	—	—
	50.	S. interparietalis (+)	—	+
	51.	s. intermedius primus	+	+
	52.	s. intermedius secundus	+	+
	53.	s. occipitalis transversus	+	+
	54.	S. parietalis superior independent	—	—
Temporal l.	55.	S. parietalis superior number of sections	3	2
	56.	S. parietalis superior + sulcus præcuneus	+	—
	57.	S. temporalis superior	+	+
	58.	anterior interruption present	—	—
	59.	middle interruption present	—	—
	60.	posterior interruption present	—	—
	61.	S. temporalis transversus, joining sulc. temp. superior	—	—
	62.	S. temporalis medius, number of sections	5	4
	63.	S. temporalis inferior, number of sections	2	2
	64.	S. lingualis independent	—	—
Occipital lobe.	65.	S. occipitalis anterior present	+	—
	66.	Arcus intercuneatus, superficial	+	+
	67.	Lobulus parieto-occipitalis present	—	—
	68.	S. occipitalis transversus inferior present	—	+
	69.	S. verticalis continuous with fissura retrocalcarina	+	+
	70.	S. lunatus present	—	—
	71.	S. paramesialis at the lateral surface	—	—
	72.	S. occipitalis medius (lateralis) + a s. temporalis	—	—
	73.	S. occipitalis medius continuous	+	—
	74.	S. occipitalis inferior independent	—	—
Limbic lobe.	75.	S. rhinicus externus joining the fissura lateralis	—	—
	76.	S. rhinicus internus present	—	—
	77.	S. collateralis	—	—
	78.	temporal interruption present	—	—
	79.	fusiform interruption present	—	—
	80.	lingual interruption present	—	—
	81.	Isthmus lobuli limbici concealed	—	+
	82.	S. subparietalis, number of segments	2	2
	83.	S. cinguli, number of segments	2	1
		S. cinguli + s. subparietalis	—	+
		S. intralimbicus present	—	—

+ means yes; — means no; L for the left hemisphere; R for the right.

TABLE BI.—Particulars with respect to the Concealed Parts of the Cortex.

	L.	R.
Transverse temporal divided	—	—
Sulcus postcentralis insulæ divided	—	—
„ præcentralis anterior, insulæ divided	—	—

	L.	R.
Opérculum orbitale number of sulci . . .	1	0
„ frontale „ „ . . .	0	0
„ centrale „ „ . . .	8	8
„ parietale inferior . . .	1	0
Posterior Heschl badly developed . . .	—	+
Deep gyrus in sulcus centralis . . .	—	—
Deep gyrus in sulcus interparietalis . . .	1	1
Deep cuneus præcuneus superior gyrus . . .	1	1
„ „ „ inferior gyrus . . .	—	1
„ lingualis anterior gyrus . . .	1	0
„ „ posterior gyrus . . .	1	0

Temporal lobes.—The superior temporal (*ts*) has an anterior interruption in the left side only; on the right the annectant gyrus giving this interruption remains nearly concealed. The transverse temporal sulcus reaches the lateral surface on the left side, and a secondary branch ascends to it from the superior temporal, but there is 2 mm. distance between their ends. On the right side the *ttr* is not to be seen on the lateral aspect, and the secondary branch has half the size of the right one. The sulcus temporalis medius (*tm*) is several times interrupted on both sides and without regularity. The sulcus temporalis inferior (*ti*) is more regular, and only once interrupted.

Occipital lobes.—The left occipital lobe belongs to a very uncommon type. There is a marked cuneo-lingual gyrus, and a concealed anterior gyrus near the stem of the fissure. The fissure does not join the collateral sulcus.

On the left the calcarine fissure ends in a straight line; on the pole is a small vertical sulcus resembling a superior lunatus. Two well-developed, uninterrupted lateral sulci, not connected with the temporal sulci, run parallel with the end of the inferior temporal, which is at the lower border. The superior of these two lateral occipital sulci joins a well-formed anterior occipital, which does not join the transverse occipital. A deep gyrus exists at the described junction, and another more where the interparietal ends. Superadded to this there is a superior occipital and unusual deep incisure joining the inferior sagittal sulcus cunei; the superior sagittal is divided into two parts. There is no inferior transverse temporal. There is no evidence of a paramesial sulcus along the supero-mesial border, unless the deep abnormal incisure accounts for it.

The stem of the right calcarine fissure remains also separated from the collateral sulcus. There is a deep gyrus at the beginning of the retrocalcarine fissure and one at its end, just before the vertical end, which is well developed and remains at the mesial surface. Nevertheless, there is a prælunatus on the lateral surface. The three lateral

antero-posterior sulci are also seen here, but the lower is not continuous with the inferior temporal. The superior continues with the interparietal, without a deep gyrus. There is no anterior occipital sulcus. The transverse occipital is double, and the lower of them joins the interparietal.

The deep incisure, as described on the left side, exists also on the right side, and the superior occipital is independent. There is an independent inferior sagittal sulcus cunei, and a well-marked superior sagittal ending in a paramesial, which covers the superior half of the supero-mesial border of the cuneus. On the right side are two inferior transverse occipital sulci, the most posterior of them resulting from the polar sulci pushed downwards by the development of the lower end of the vertical calcarine sulcus, the most anterior being formed by the collateral and the lingual sulci.

Limbic lobes.—The limbic lobe is limited in both hemispheres by a quite simple boundary. The rhinal sulci do not join the lateral fissure. The sulcus collateralis is not interrupted. The isthmus is not concealed on the left side. The sulcus cingulatus is interrupted on the left side, where it belongs to type V of Retzius. On the right side this sulcus shows the common type in No. 1. On neither side is there a sulcus rhinicus internus.

Indices of Bilateral Comparison for the Lobes.

	12 male brains.	Pullen.
\mathcal{H} and c . . .	76.4 . . .	80
Frontal lobes . . .	79.7 . . .	76
Parietal lobes . . .	69.2 . . .	62
Temporal lobes . . .	61.9 . . .	83
Occipital lobes . . .	72.0 . . .	72
Limbic lobes . . .	68.5 . . .	70
	<hr/> 74.35 . . .	<hr/> 73

The greatest differentiation between left and right exists in the parietal lobes; the least in the temporal lobes.

The following table summarises the measurements of the depth of the sulci taken in eighteen places of the hemispheres on each side. As a means of comparison, the same measurements have been taken in a normal brain and in a heavy brain. Then the radius has been calculated for a sphere, the volume of which would be the same as the concerned hemispheres, and the percentage of the depth of the sulci according to that radius has been given.

Depth of Sulci in Millimetres and Per Cent. of Radius.

	Pullen.		Normal.		Heavy brain.		
	L.	R.	L.	R.	L.	R.	
Depth of primitive sulci	17.2	17.0	19.0	18.0	19.4	18.9	mm.
„ of newer sulci	14.7	15.4	16.0	15.0	18.5	18.0	„
„ of summa (mean)	16.3	16.8	17.8	16.8	18.8	18.2	„
Mean for both hemispheres	16.3		17.3		18.8		„
Weight of the hemispheres	1045		1055		1420		grm.
Radius of sphere (same vol.)	62.99		63.16		69.77		mm.
Per cent. of radius occupied by depth of the sulci	25.87		27.39		26.95		per cent.

Whence we see that the normal brain has comparatively the deepest sulci, the heavy brain less deep, and Pullen's brain the least deep sulci. Looking for details, it is to be noticed that this is not the case for the stem of the calcarine fissure on the right side in Pullen, nor in his sulcus cingulatus, nor in the sulcus collateralis. The rhinencephalon and the occipital region appear to have been the least affected by the arrest of development. The left hemisphere has suffered more in its accessori sulci than the right.

A microscopical examination has been made on different parts of the hemispheres, but the senile deterioration is too advanced to allow of any conclusions being made about the conditions that may have existed during Pullen's period of full mental strength.

Next to its documental value, the brain of Pullen may give us an interesting example for the study of the convolutional pattern in a small brain. For this study we would have to review which are the indications of a more simple pattern, as it is usually found in small brains of arrested development—these we would have to control by comparison with the characteristics of a more fully evolved type—and ascertain whether there is a predominance of one of these tendencies in the case of Pullen.

In order to do such descriptions with accuracy it would be necessary to have the results obtained in a sufficient number of brains, methodically tabulated in series. I am compiling such tables, but I cannot yet use them, as they are not worked out. The records obtained in the study of relative brains are of interest, and may show the modification of the familial pattern under the influence of differences in weight, and so allow us to trace which conditions are more likely to be inherited—independently of any other influence—and which are more under the influence of personal variability.⁽⁸⁾

The scheme of this study, however, is again not enough advanced to be completely demonstrative, and I have, therefore, used the results of Spitzka and Cunningham in addition to my own.

Tokens of arrested development and simple pattern in the brain of Pullen :

1.(4) There is only one anterior ramus of the fissura lateralis in both hemispheres.

2. There is only one posterior ramus of the *f* in the left hemisphere.

10. The sulcus centralis does not cut the supero-mesial border (on both sides), and it does not anastomose with *f* at its lower end (No. 9).

23. The sulcus frontalis superior is in three sections on the left side (usually it is in one or two sections) ; on the right side it is in one section ; it may therefore, be considered as badly developed on the left side.

28. The sulcus frontalis inferior is continuous on the left side, and not on the right side. This sulcus is interrupted in well-developed brains, but then the terminal portions anastomose with the neighbouring sulci, at least at the anterior end. Next, peculiarities observed show that such is not the case in Pullen. The right *f*, therefore, is in better condition than the left, which is the contrary to what obtains in right-handed individuals.

29. *f* does not anastomose with the sulcus diagonalis on the right side ; it reaches *d* on the left side, without anastomosis.

30. *f* does not anastomose with the sulcus radiatus (*r*).

31. Nor with the sulcus fronto-marginalis (*fmg*).

41. The sulcus interparietalis proprius is interrupted (*ip*).

50. There is an isolated sulcus intermedius anterior (*ima*).

56. The sulcus parietalis superior does not anastomose with the sulcus præcuneus (*s.pr*).

60. The pattern of the temporal lobe is not bad, except for the lack of anastomoses of the transverse temporal sulcus with the superior temporal, but the gyri are shallow, and there are but few secondary branches on the sulci.

61. There are too many divisions and too few connections in the middle temporal (*tm*).

76. The temporal interruption of *col* is present, as usually happens, when the speech centres on the lateral surface have not pressed the lateral cortex to the lower surface.

79. The isthmus lobi limbici is not concealed in the left hemisphere.

80. The sulcus subparietalis is interrupted in both sides.

82. The sulcus cinguli follows a simple pattern on both sides, type V on the left, type I on the right.

The former indications show that there is a greater lack of development in the left than in the right hemisphere.

Are there indications of superiority, or any peculiarities that might suggest that the brain belongs in some parts to a higher type of human evolution ?

67. The occipital lobe is well developed on both sides, and differences between the two sides are marked. On the left side there is a well-developed lateral anterior occipital, but a less marked inferior transverse occipital. On the right side there is an interruption of the calcarine fissure, which may be a familial characteristic. On the right side there is a good paramesial, which is evident on the lateral surface; on the left side the paramesial is interrupted. On both sides a deep sulcus which joins the sulci cunei gives an unusual type of greater complexity and deeper development of the occipital cortex, the distance from *rcal* to *tr* is smaller on the left side. The good development of the occipital region is more marked on the left side. Moreover, the occipital index is small, where the frontal and the parietal indices are larger than usual.

Corpus callosum.—The length of the corpus callosum exceeds the usual measurements; it nearly attains the same length as it does in brains of 1545 and 1593 grm., described by Spitzka. As the length of the callosum is one of the most constant familial characteristics, and as Pullen's parents were first cousins, the large development in Pullen's brain is likely to have resulted from a reinforced hereditary tendency.

Some unknown pathological factors had reduced the brain mass, and especially arrested the development of the central, temporal, and frontal lobes. As is usually the case under such circumstances, the left side was more affected than the right side. The large development of the corpus callosum, in addition to the better preservation of the occipital lobes, may have been of no little importance as regards the visual capacity and the artistic skill that gave Pullen, with his perseverant and tenacious character, the means of attaining a personal originality and distinction.

Tredgold, after careful examination, came to the conclusion that the case was not one of *primary* amentia, but that it should really be classed as an example of mild *secondary* mental deficiency, due to sense deprivation (deafness). "The condition," he writes, "is similar in kind, although differing in degree, to that frequently seen in neglected cases of congenital deafness, and it is not greatly dissimilar to that of some non-idiotic savants, who, absorbed in their one particular subject, have gradually lost interest in, and severed their connection with, the outer world."

Every discussion about classification of mental cases has always proved to be fruitless, except for the demonstration of new facts enabling one to modify accepted opinions. Much can be said in favour of Tredgold's conclusions, but clinical classifications are often too artificial. When a complete examination can be performed, many cases of so-called primary amentia may be considered as secondary to some localised

pathological influence, which has caused the arrest of development of the brain, or impeded education by the severance of social connections.

Pure hereditary influence, affecting the whole of the brain in an harmonious manner, is hypothetical. Through heredity, pathological influences act by local processes and disharmony.

At first sight I thought it possible to compare the brain of Pullen, which appears almost well fissurated, with those cases of infantilism as described under the name of "Type Lorrain." But I had soon to abandon so hazardous an opinion. The brain is small, its frontal and temporal lobes are badly developed; there is a lack of complexity in the convolutional pattern of these lobes, and this is especially marked in the speech centres; his deaf-mutism was more central than peripheral in origin. The parietal lobes were not so bad; the occipital lobes were good, the corpus callosum was remarkable, and *he was bound to have special capacity in the visual sphere of his mental existence.*

I have never thought it possible to explain by the description of the brain, why Pullen was so tenacious and so industrious. Just as the complexion—may it have been the internal secretions that granted him a sound long life?—the foundation of his character was not only to be found in his convolutions.

"Science has done much for us," says Carlyle, in his *Hero Worship*; but it is a poor science that would hide from us the great deep sacred infinitude of Nescience, whither we can never penetrate, on which all science swims as a mere superficial film. This World, after all our science and sciences, is still a miracle; wonderful, inscrutable, *magique*, and more, to whosoever will *think* of it."

And so was Pullen.

(¹) The brain of this interesting case was sent to Lt.-Col. Mott by Dr. Caldecott, who handed it to Dr. Sano for investigation, who acknowledges with gratitude a grant from the Medical Research Committee of the National Health Insurance.—(²) A. F. Tredgold, *Mental Deficiency*, second edition, London, 1915. Contains a complete record of Pullen's activity, illustrated by numerous figures. The figures which I give in this paper have not hitherto been published.—(³) "Convolutional Pattern of Relative Brains in Man," *Proc. Roy. Soc. Med.*, 1917; *Id.* in "Identical Twins" (*Philosoph. Trans. of the R.S.*, 1916). F. Sano.—(⁴) The numbers refer to those of Table B.

An Ectromelus (¹): *An Atavistic Relapse.* By S. B. PAL, B.A., L.M.S. (Cal. Univ.), Assistant Surgeon, Central Asylum, Federated Malay States.

DARWIN, after a most comprehensive and searching investigation of the phenomena of life and variation, came to the conclusion that "man is the co-descendant with the other mammals of a common progenitor," and still "bears in his bodily frame the indelible stamp of his lowly

origin." With the immense and varied ancestry man has had, and the infinitude of his connections with the rest of the animal world, "ata-
vism," *i.e.*, inheritance of characteristics from remote, not from the more immediate ancestors, is a very interesting subject of study. The presence of supernumerary nipples in man may be cited as an example of atavism. This abnormality has been noticed by me in four patients during five years' observations in the hospitals in this country. In some parts of Central and Eastern Europe a very high percentage of men is said to possess this abnormality. This characteristic is absent in apes, baboons, and monkeys, who are men's immediate successors, but is found in lemurs, an order of mammals lower in order. The rare occurrence of multiple births in women is a characteristic which is reversion, or atavistic towards the condition normal in lower vertebrates.

Dr. F. E. Bolton, in his paper on "Hydro-Psychoses" (water atavism), brings together some of what he terms "the abundant proofs of man's pelagic ancestry." One of the characters mentioned in the paper is the formation of the hand of man. He considers the hand of man is in shape and bones "more like the primitive amphibian paddle than is the limb of any other mammal." Emerson, in the same way, thinks that "the brother of man's hand is now cleaving the Arctic Sea in the fin of the whale, and, innumerable ages since, was pawing the marsh in the flipper of the saurus."

If our hands are regarded by naturalists as developed from the limbs of our remote ancestors who lived in the sea, I think that the characters of the limbs of the ectromelus, photographs of whom are reproduced here, show a further "atavistic relapse."

Besides the superficial similarity of appearance of the upper extremity of the ectromelus to the fore-limb of the whale or seal, the characters of the different bones have some similarity to those of Cetaceans (whale family).

The following diagram of skeleton of the upper extremity of a man, of the ectromelus, and of the fore-limb of a whale, clearly shows how that of the ectromelus resembles the fore-limb of a whale.

The points of resemblance between the upper extremity of the ectromelus and the fore-limb of the whale are :

- (i) The stunted appearance as compared to the upper extremity of man.
- (ii) The arch-like curvature of the bones of fore-arm.
- (iii) The immobility of the palm, the phalanges, except the thumb, of the ectromelus having no power of flexion or extension.

In whales there are no hints of hind-limbs, and in this ectromelus the lower limbs are in proportion to those of a normal man very small, as shown in the diagram below.



FIG. 1.

To illustrate paper by Dr. S. B. PAL.

دین محمد علی

دین محمد علی

DIN MOHAMMAD.

Hand writing of the ectromelus.

FIG. 2.

JOURNAL OF MENTAL SCIENCE, JULY, 1918.

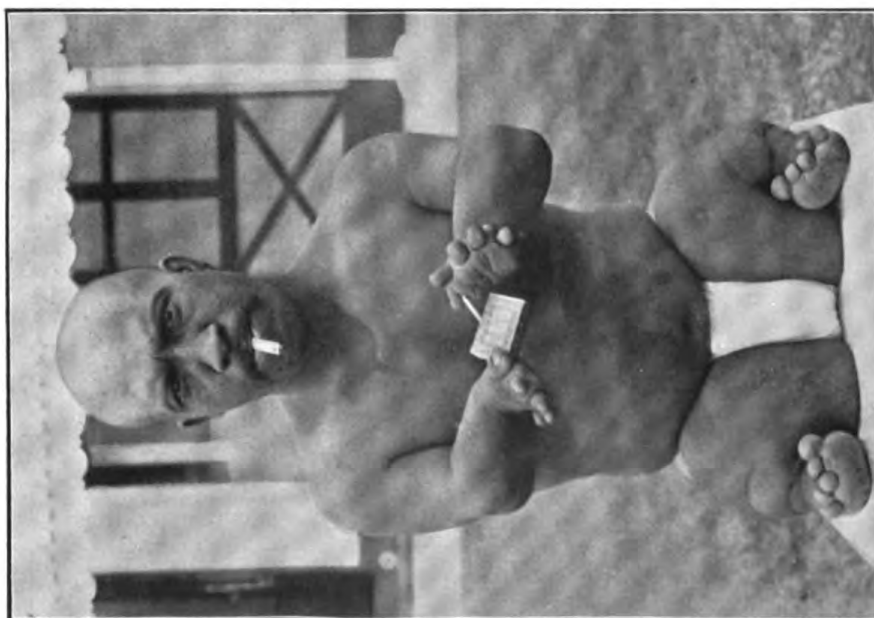


FIG. 3.

To illustrate paper by Dr. S. B. PAL.

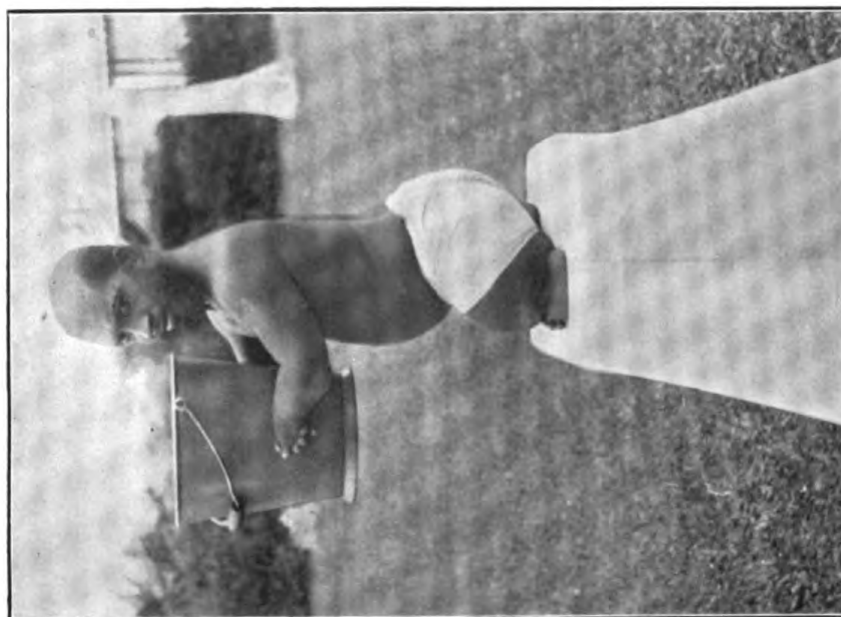
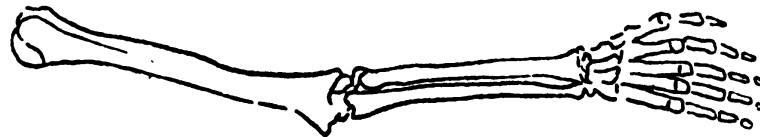


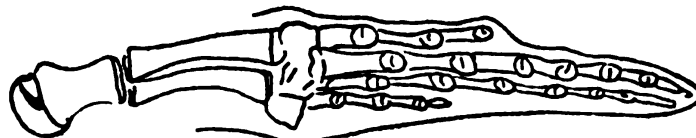
FIG. 4.

Adlard & Son & West Newman, Ltd.

The hind-limb of the whale is represented by a rudimentary femur and tibia only, and it is remarkable that in this ectromelus there are no



Man

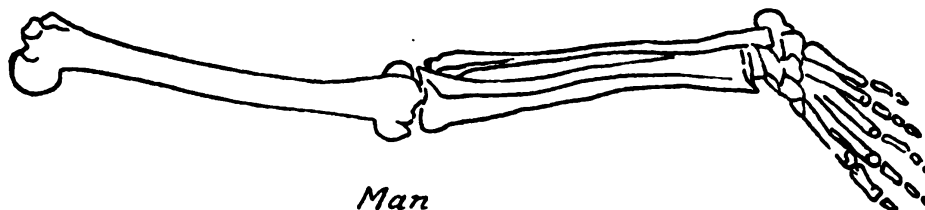
*Ectromelus.*

Whale

FORE-LIMB.

fibula or metatarsal bones and the phalanges are rudimentary, consisting of one digit in each, and unattached to any muscle.

The ectromelus, an Indian Mahomedan, æt. about 36, was admitted



Man

*Ectromelus.*

HIND-LIMB.

into Batu Gajah Hospital for the treatment of malarial fever. He lives on the charity of others, and roams about from place to place. Nothing about his family history can be made out, as he thinks his parents died or deserted him when he was a baby. There are no points of interest

in his previous history, except that he contracted venereal disease about five years ago.

It would have been very interesting to get radiograms of the limbs, but in their absence I will try to show in the appended table the size of the different parts of the body of the ectromelus as compared to the same parts in the individual who is standing by his side in the photograph.

	<i>Ectromelus.</i>	<i>Man.</i>
Weight	6 st. 10 lb	10 st. 6 lb.
Height	3 ft. 1 in.	5 ft. 8½ in.
<i>Body :</i>		
One acromion process to the other	1 ft. 4 in.	1 ft. 5 in.
Girth of chest at level of nipple .	2 ft. 11 in.	2 ft. 10½ in.
One anterior superior iliac spine to the other	11 in.	1 ft. 1 in.
<i>Upper extremity :</i>		
Acromion process to outer condyle of humerus	9 in.	1 ft. 1½ in.
Girth of arm	10 in.	11 in.
Head of radius to its styloid process	5 in.	11 in.
<i>Metacarpals : (a)</i>		
First	½ in.	2 in.
Second	½ in.	2½ in.
Third	½ in.	2½ in.
Fourth	<i>nil</i>	2½ in.
Fifth	<i>nil</i>	2 in.
<i>Phalanges : (b)</i>		
Thumb	1 in.	2½ in.
Other phalanges	¼ to ½ in.	—
<i>Lower extremity :</i>		
Anterior superior iliac spine to lower border of patella . . .	7 in.	1 ft. 7½ in.
Girth of thigh	1 ft. 10 in.	1 ft. 8 in.
Head of tibia to inner maleolus .	5 in.	1 ft. 4½ in.
Fibula	Wanting	—
Metatarsals	Wanting	—
<i>Phalanges : (c)</i>		
Big toe	1 in.	2½ in.
Other toes	about ½ in. each	—
Foot	5 in.	10½ in.

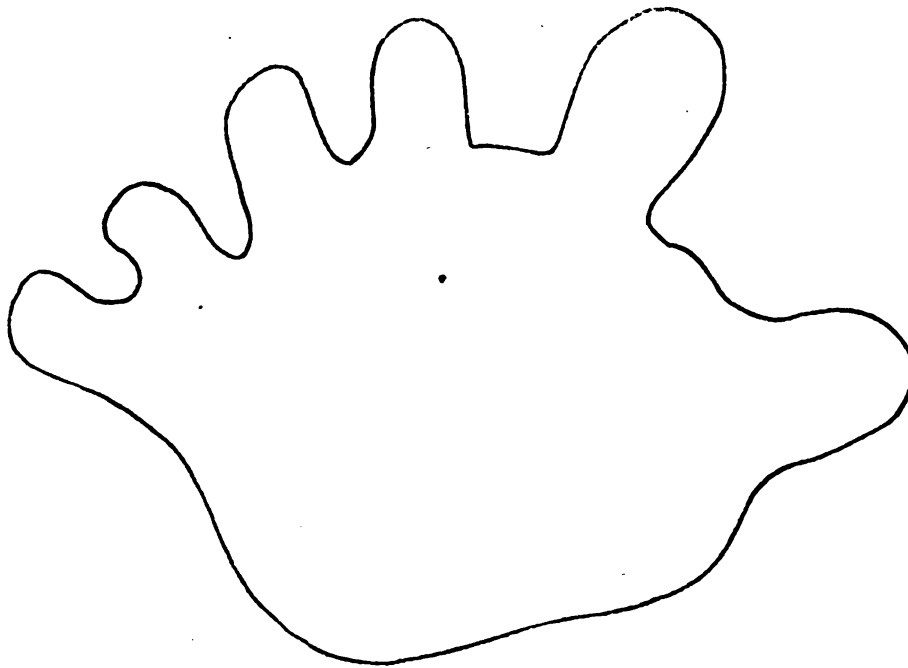
(a) Only the first metacarpal is jointed to the carpus, the second and third being only thin spicules of bones, having no connection with the carpus. The third metacarpal bone is absent in the left hand.

(b) There are six phalanges in the hand, the sixth one arising from the fifth. All the phalanges consist of one digit each. The thumb only has power of flexion and extension, other phalanges being immobile.

(c) The phalanges, five in number, consist of one digit each and are immobile. They project more from the dorsum of the foot, and do not touch the ground when the ectromelus walks.

In view of the fact that the limbs of this ectromelus are so very defective, it is really astonishing what he is able to accomplish. He can easily walk a distance of a mile or so, and is independent of any

help from others, or of any mechanical contrivance for eating, dressing himself, etc. He uses a spoon, which he holds between the thumb and the palm. To eat "chapati," he holds one edge between the thumb and palm and tears a small piece. This piece, with a little curry over it, he pushes on the dorsum of the right hand with his left, and then carries it to the mouth. The "langoti" (a T-shaped apparel used as underwear by some men of Northern India), in which he appears in the photograph, is arranged by himself. He holds a pen between the thumb and palm or between the external edges of two palms, and writes tolerably well, as shown in the diagram of writing.



Actual size of palm (left).

He can roll tobacco in paper to make a cigarette and then light it, as shown in the photograph: and can easily raise the bucket full of water, weighing 36 lb., as also shown.

To climb a height, as on to the stool on which he is standing in the photograph, he puts his palm on the top, and with the arms he raises himself up a little. Then he puts one foot on one of the legs of the stool and rises up in the same way as we would climb a place nearly equal to one's height.

My thanks are due to Mr. S. A. Row, Hospital Assistant, for taking the photographs according to my suggestions.

REFERENCES.

- (1) A. F. Chamberlain.—*The Child*.
- (2) Thomson.—*Outlines of Zoology*.
- (3) Foster and Shore.—*Physiology*.

TANJONG RAMBUTAN,
March 24th, 1918.

(1) Derived from Gr. *ἐκτρωμα*, abortion, and *μῆλος*, limb.

A Record of Admissions to the Mental Section of the Lord Derby War Hospital, Warrington, from June 17th, 1916, to June 16th, 1917.⁽¹⁾ By R. EAGER, M.D., Major, R.A.M.C.(T.), Officer in Charge Mental Division L.D.W.H. and Senior Assistant Medical Officer Devon County Asylum.

DURING the first twelve months of the admission of patients to the mental wards of the Lord Derby War Hospital there were 2,429 admissions and 1,466 discharges. The average number of admissions per month was 202, and the average number of discharges per month was 122. To those who have devoted their time to the admission and discharge of mental cases in large asylums in peace time these numbers alone will convince them that the condition of things must be very different to what they have been accustomed. The enormous amount of work in investigating these cases will also, I am sure, be appreciated, and those who, in addition, have any knowledge of Army Forms and the preparation of these before the final discharge of a patient from hospital will realise the amount of routine necessary before these 1,466 patients could be discharged.

I propose now to review the work done during these twelve months, and in doing so to briefly indicate the nature of the cases coming under the various groups.

Table No. I shows the total admissions to the mental section of the hospital during the period under review, grouped under the sources from which they came. It also shows the discharges under the same headings and their disposal.

Table No. II shows the cases classified according to the official nomenclature under the various forms of mental and nervous disorders represented by these cases.

Before further splitting up these figures into their sub-groups I should mention that on the opening up of the 1,000 beds provided at the Lord Derby War Hospital for the accommodation of mental cases a large amount of the room was very quickly used up by "home troops." By the latter term I mean cases who had not served overseas with an Expeditionary Force and who had shown mental symptoms sooner or later after enlistment. From the admission rate of these cases alone

TABLE I.—*Showing Totals Admitted and Discharged, and How Disposed of.*

France.	Medit.	Mesop.	Egypt.	Salonica.	U. K.	Officers.	Pensioners.	Cameroons.	East Africa.	Total.
1811	14	65	141	97	289	1	6	1	4	2429
<i>Admitted.</i>										
995	10	37	93	66	257	1	4	1	2	1466
<i>Discharged.</i>										
<i>How Disposed of.</i>										
535	6	25	45	38	168	—	4	—	2	823
176	1	7	32	21	8	1	—	1	—	247
197	1	3	10	4	9	—	—	—	—	224
12	—	—	—	—	6	—	—	—	—	18
75	2	2	6	3	66	—	—	—	—	154
<i>Home. Duty. Other hospitals. Died. Sent to asylums.</i>										
<i>Remaining in Hospital (at end of twelve months).</i>										
816	4	28	48	31	32	—	2	—	2	963
<i>Remaining in Hospital (four months later).</i>										
322	3	15	30	15	2	—	2	—	1	390

it soon became evident that the accommodation would be insufficient, and it became necessary to limit the reception of cases to this hospital to men who had served with an Expeditionary Force. The home troops are now dealt with by other methods. The principle of dealing with them after their admission to this hospital was similar to that

TABLE II.—*Showing Total Admissions and Discharges according to their Mental Disease.*

Form of mental disease.	Totals.	Discharged to civil occupation.	Sent to asylums.	Transferred to other hospitals.	Sent to home duty.	Died.	Still in hospital.	Totals.
Cerebral syphilis	3	1	—	—	—	2	—	3
Epilepsy	20	14	—	—	4	—	2	20
Hysteria	5	3	—	—	2	—	—	5
Somnambulism	1	1	—	—	—	—	—	1
Mental deficiency	338	148	12	18	21	—	139	338
Mania	200	52	8	20	25	5	90	200
Melancholia	448	170	14	29	45	1	189	448
Mental stupor	54	4	2	12	1	—	35	54
Delusional insanity	371	118	19	31	26	1	176	371
Epileptic insanity	21	13	1	1	—	1	5	21
Moral insanity	6	4	—	—	—	—	2	6
Impulsive insanity	5	2	—	1	2	—	—	5
Acute delirium	26	10	—	2	6	—	8	26
Confusional insanity	251	74	3	32	40	2	100	251
Alcoholic insanity	30	12	3	4	2	—	9	30
G. P. I.	112	8	66	5	—	4	29	112
Dementia præcox	200	44	19	22	12	—	103	200
Secondary dementia	48	21	1	8	—	—	18	48
Mental instability	48	26	2	3	7	—	10	48
N. A. D.	25	—	—	17	6	—	2	25
Shell shock	68	26	—	8	21	1	12	68
Neurasthenia	145	71	4	11	27	—	32	145
Concussion of the brain	1	1	—	—	—	—	—	1
Tumour of brain	1	—	—	—	—	1	—	1
Locomotor ataxia	1	—	—	—	—	—	1	1
N. Y. D.	1	—	—	—	—	—	1	1
Totals	2429	823	154	224	247	18	963	2429

adopted by the Army authorities in peace time. They were admitted for the purpose of examination, observation, and diagnosis, and if considered mental cases and were not making rapid improvement they were certified, and sent to the county asylums to which they were chargeable. If, however, they showed signs of improvement they were retained in hospital till they were able to be discharged to the care of their friends. It will be noted below that only eight cases from the home troop group returned to duty. Of these one showed no

appreciable mental disease, and the others had been on garrison duty abroad and had had very mild symptoms.

HOME TROOP CASES.

Table III deals solely with the home troop cases, and I will now proceed to discuss these in detail. Taking the classes represented in the official nomenclature separately, the largest one is that contained in the group of "Mental Defectives."

TABLE III.—*Showing Total Home Troops, Admissions and Discharges classified according to their Mental Disease.*

Form of mental disease.	Totals.	Discharged to civil occupation.	Sent to asylums.	Transferred to other hospitals.	Sent to home duty.	Died.	Still in hospital.	Totals.
Concussion of brain	1	1	—	—	—	—	—	1
Epilepsy	3	3	—	—	—	—	—	3
Somnambulism	1	1	—	—	—	—	—	1
Neurasthenia	26	21	2	—	2	—	1	26
Mental deficiency	53	42	10	1	—	—	—	53
Mania	13	7	4	1	1	—	—	13
Melancholia	37	22	10	—	4	1	—	37
Epileptic insanity	3	3	—	—	—	—	—	3
Mental stupor	2	1	—	—	—	—	1	2
Delusional insanity	43	27	12	2	—	1	1	43
Moral insanity	1	1	—	—	—	—	—	1
Impulsive insanity	1	1	—	—	—	—	—	1
Acute delirium	1	1	—	—	—	—	—	1
Confusional insanity	11	7	2	1	—	1	—	11
Alcoholic insanity	9	7	2	—	—	—	—	9
G. P. I.	16	2	11	—	—	3	—	16
Dementia præcox	24	12	12	—	—	—	—	24
Secondary dementia	10	7	1	2	—	—	—	10
N. A. D.	1	—	—	—	1	—	—	1
Mental instability	2	2	—	—	—	—	—	2
Totals	258	168	66	7	8	6	3	258

Mental deficiency.—There were 53 admissions (or 20 per cent. of home troop admissions). All types of mental deficiency were met with.

Speaking broadly with regard to the cases of this group, it is quite clear that they would be of no use for military purposes, and they are quite unable to come up to the standard required for military discipline. It is clear also that in most cases they have realised their deficiencies, and a great many have felt very acutely their inability to compete with their fellows. This has only aggravated their condition. The question as to whether, if they were collected into a special

battalion, and treated on different lines to the ordinary soldier, they could be used for work as labourers under special supervision is a point for consideration. My opinion is that a great deal of useful work might be obtained from them under these conditions if they were properly handled. But under present conditions it is difficult to understand why so many are being enlisted and passed by recruiting medical officers as fit for duty. It is quite impossible to expect them to do the duties they are asked to perform in competition with other men of a much higher mental calibre.

Delusional insanity.—This represents the next largest group under home troop cases. There were 43 cases in all (or 16 *per cent.*).

In many of the cases of this class who were discharged from hospital to their homes the condition had evidently existed prior to enlistment, and although they might easily have been certified on discharge, one felt that they had carried on in civil life previously in spite of their delusions, and that they would probably be still able to do so. Many cases had only been in the Army one or two months prior to admission.

Next for consideration is the *Melancholic Group*. There were 37, or 13 *per cent.* classified as such. An example of this group will now be given.

No. 5399 Pte. K. G—, æt 41. Builder's labourer. Enlisted September 4th, 1916. Father committed suicide. Patient was brought under observation on September 10th, for throwing himself in front of a motor-car. He was in a state of extreme melancholia, and said he was afraid to be left alone. He wrote a letter addressed to his wife saying, "I am dying," and on the envelope was written, "when I am dead send this to my wife." Examination elicited the fact that he had been called up a week previously, and could not settle down to his drills. Became nervous, and imagined that he was going to be shot. His tongue and hands were tremulous, and his general condition one of extreme agitation, but there were no other neurological signs. He looked old for his age, and his arteries were thickened.

On inquiry into his personal history it was ascertained that he had always been a very nervous man, afraid to leave the house alone at night, and would be frightened at a piece of paper in the dark. He had had a "nervous breakdown" six years previously when he was looked after at home. He made a steady improvement under hospital treatment, and was able to be discharged to the care of his wife in November, 1916.

The above condition was no doubt produced by the stress of training in a mentally unstable individual with a hereditary predisposition to mental disease.

The ten cases who were certified were similar cases, in which the stress of military duties reacted adversely on them, and led to suicidal attempts. Alcoholic intemperance was an associated factor in several instances. These cases did not show any signs of rapid improvement,

and therefore had to be certified in accordance with Army Council Instructions.

The neurasthenics figure as the next largest group of cases among the home troops.

There were in all twenty-six cases, one of which still remains in hospital, and is undergoing a course of 606 and mercurial injections. As regards the two sent back to duty, of whom one was an R.A.M.C. orderly belonging to the L.D.W.H., both were mild cases, and were only eleven days in hospital. On the other hand, the two cases certified were very severe cases.

Of the twenty-one cases which were discharged to civil duties the following example will suffice :

No. 194982, Driver H. F—, æt. 36, music-hall manager. Enlisted August, 1916. About October 1st, 1916, whilst training he was kicked in the abdomen by a mule, and since that time he had been in bed. He was admitted to the Hospital on October 10th, 1916, with some bruising of the testicles and pubis and involuntary micturition. Examination by X rays failed to show any fracture. He was in a state of general nervousness and anxiety with regard to his condition, and fearful when questioned about himself. He slept badly, but showed no other mental symptoms. He rapidly regained his self-confidence, however, and his incontinence ceased. On December 28th he was brought before a Medical Board and discharged. This man's family record showed that his grandfather was in an asylum for ten years and died there. His brother was also of a highly nervous disposition, and the patient himself had a nervous breakdown two years previously after producing three revues in the music-halls for the War Relief Fund.

Dementia præcox occupies the fifth highest position and accounts for 24 cases (or 9 *per cent.* of admissions). Of these, 12 were discharged home and 12 were certified. The following cases represent types of this group :

No. 28686, Pte. S. T—, æt. 24. Enlisted June 13th, 1916. Previous occupation a labourer. This patient was admitted to the L.D.W.H. on September 13th, 1916, with the report from his regimental medical officer that he had done no duty since joining. On examination he was very resistive and his expression was sullen. He took no interest in his surroundings and had marked *flexibilitas cerea*, and a tendency to retention of urine. He would not answer questions, and was generally negativistic. On September 20th he assaulted one of the orderlies by striking him. During his stay in hospital he rarely answered questions and only then in monosyllables, and he remained in a state of inertia till he was finally disposed of by certification, and transferred to asylum care on November 14th, 1916. The father of this patient stated that there was no mental trouble on either side of the family, and the first indication they had of anything being the matter with the boy was when he was arrested for being an absentee. He stated, however, that he had always been of a reserved disposition and made no friends in civil life.

No. 6005, Pte. H. J—, æt. 32, fitter by trade. Enlisted March 16th, 1916. Patient was admitted to the Hospital from the detention barracks at Wakefield, where he had been undergoing a sentence of eighty-four days for insubordination. The official records showed that he had two previous periods of detention of twenty-one and fourteen days respectively for a similar offence. His history, obtained from his mother, showed that from November 21st, 1907, to September, 1908, he had been a patient in the Three Counties Asylum, which was corroborated on application to that institution. On admission to hospital from Wakefield he was rambling and inconsequential. He answered questions irrelevantly and took very little notice of his surroundings. He had an imperfect appreciation of time and place and no insight into his condition, and was generally apathetic and uninterested. He had no neurological symptoms and was in a satisfactory bodily condition. The more marked symptoms fairly rapidly cleared up and left him rather dull, stupid, and simple, and he was boarded out of the Army as permanently unfit for service a month after admission and allowed to return home to his friends.

Next come the cases of *general paralysis of the insane*. There were 16 cases (or 6 *per cent.* of the home troop admissions). Of these, 2 were in a very early stage, and their friends undertook full responsibility for their welfare. Eleven were certified for asylum care and 3 died in hospital. The cases were in all respects similar to those met with in civil asylums, and, therefore, no further mention will be made on this group of cases here, and the observations on the Wassermann reaction and other tests will be deferred till dealing with the Expeditionary Force cases.

I will, therefore, proceed to deal with the *cases of mania* as the next largest group. There were 13 admissions, 7 of whom were discharged home, 4 were sent to asylums, 1 was transferred to another hospital, and 1 was considered fit to return to home duty.

The transfer was an Australian, who was boarded and recommended for repatriation. Of the cases who were sent to their homes and civil occupations the following is an example :

No. 34040. Lce.-Corpl. P. A—, æt. 39, farm labourer. Enlisted August, 1915. This case was admitted to the L.D.W.H. on October 13th, 1916, with report that he had been noisy, restless, and excitable. It was ascertained that he had been twice previously in an asylum, the first time from February to May, 1913, and on the second occasion from July to December, 1914. He quickly quietened down after admission and in November, 1916, was discharged home to his wife.

The one patient returned to duty was a case who rapidly regained his mental balance. His age was 41, occupation architect. He had a good character from his Commanding Officer, and was allowed to return to duty on recovery owing to the mildness of the attack and at the patient's expressed desire.

The cases coming under the heading of *confusional insanity* total eleven. The following case was discharged home :

No. R/17280 Rifleman G—, æt. 30, engineer in ship-yard. Enlisted October, 1915. In June, 1916, patient was admitted to hospital. He was sleepless by night and suffering from visual hallucinations, and was generally in a state of mental confusion with a certain amount of clouding of consciousness. His bodily condition was weak, and he had some cough and expectoration. The latter was subsequently examined, but tubercle bacilli were not demonstrated. Physical signs of phthisis were not definite. The condition rapidly improved, and in November, 1916, he was discharged home to the care of his friends. In this case his mother was an extremely nervous woman, one of his maternal aunts and uncles died in an asylum, and his father's brother died of phthisis. The strain of training for military duties had been too much for a subject of this type.

We will now proceed to the cases of *secondary dementia*. There were ten returned as such.

Two of these, one of whom was an Australian and the other a South African, were transferred to other hospitals for purposes of repatriation. I will give one example :

A case taken home by relatives. No. S/956 Pte. S.C—, æt. 53, paper-hanger. Enlisted August 14th, 1915. Was admitted to the L.D.W.H. on October 20th, 1916, with a history that he had returned from India. He had been under observation for mental trouble since May, 1916, and had previously been in the Richmond Asylum, Dublin. He was sent to hospital as a case of mental deficiency, and it was reported that he was unable to do his drill, and could not look after himself or his equipment. It was necessary at once to have him scrubbed as he was in a verminous condition. There was no history of sunstroke, fever, or syphilis. He admitted indulgence in alcohol. On examination, he was disorientated in time and space. His memory was bad for recent and remote events, and his general intelligence of a low order. He was only able to do light work under supervision. Physically, his arteries were markedly tortuous and thickened, but his general condition and nutrition were fairly good. His hearing was defective. Pupils active, deep reflexes increased. The case seemingly was an ordinary case of progressive dementia with no marked characteristics, and, as the patient's father was willing and able to take the responsibility for his welfare, he was allowed to take him home.

Alcoholic insanity will now be considered. There were admitted in all nine cases. For the sake of illustration one example will be given.

No. 20725, Pte. B. R—, æt. 40, labourer. Enlisted April, 1915. He was employed on munitions in September, 1915, after he had completed his preliminary training. In January, 1916, he fell and injured his back. He was ordered to report for an examination but failed to do so, and on a visit being made to his home he was found to be under the influence of drink. He was admitted to the Hospital on January 22nd, in a dull, confused mental state. Did not seem to appreciate his

surroundings, and left to himself he would wander about in an aimless manner. He smelt of drink on admission, and physical examination revealed tremors of his tongue, hands, and facial muscles. His pupils were rather sluggish, but his reflexes did not show any deviation from normal. His Wassermann reaction was negative. The condition rapidly cleared up, and in March he was able to give a coherent account of himself, and was correctly orientated for time and place. He made no complaints, and behaved in every way rationally and sensibly. He was, therefore, discharged home.

In the *epileptic group* there were three cases without any marked mental symptoms, and three cases in which mental symptoms were present. They were all discharged to their homes. The following is an example :

No. 32504, Pte. C. T. J—, æt. 28. Enlisted February, 1916. No regular occupation formerly. At the age of 12 he fell downstairs. Following this fall fits at frequent intervals are said to have developed. He had previously enlisted in the Army, and was discharged in July, 1915, on account of his fits. He re-enlisted early in 1916, and in May of that year went to India. He was in November, 1916, again regarded as unfit for service owing to the increasing frequency of his fits. He had since his enlistment been in trouble for being drunk, using bad language, not complying with an order, and even striking his superior officer. He was sent back to England and admitted to the Lord Derby War Hospital, December 28th, 1916. On admission here he could give but a poor account of himself owing to his slow cerebration. He said his occupation in civil life had been distributing handbills, and that he earned about 14s. a week. His memory seemed very defective, and at times he would not answer questions, seeming to realise this defect. He was easily confused. He was unable to give the date or month correctly, said he thought it was November. He had three convulsive seizures whilst under observation, and was dazed all the following day. The condition was typically epileptic, and at times, whilst in hospital, he was inclined to be rather impulsive. His friends expressed a wish to take him home on their responsibility, and this they were allowed to do on January 17th, 1917. The case appeared to be an advanced case of epileptic dementia.

There were two cases recorded as *mental stupor*. One of these was a returned Expeditionary Force soldier doing home duty, who has not recovered sufficiently to justify his discharge, and is therefore still retained in hospital. The other case is as follows :

No. 32818, Air Mechanic L. M—, æt. 21, a turner. Enlisted June 16th, 1916. Patient was admitted to L.D.W.H. January 1st, 1917, with report that in the preceding August he became depressed and worried about being away from his mother. In September he became more depressed and went home on leave. He gradually lapsed into a semi-stuporose condition. On inquiry from his relatives no history of any nervous or mental trouble was admitted to exist in the family, and he was stated to have had no worries or previous nervous

attacks of any kind. On admission he was dull, stupid, and took no interest in anything. Had to be spoon-fed and have everything done for him, and was defective in habits. He rapidly improved, and was able to take an interest in things in an ordinary way. The condition was no doubt brought on by exposing a nervous young lad to the strain of ordinary military service. He was discharged to his civil occupation on January 15th, 1917, appearing to be in his normal state.

Mental instability.—Two cases were diagnosed as mental instability. These were both highly neurotic individuals who had a bad history of mental trouble in the family, and one or more mental breakdowns prior to joining the Army. They were both discharged to their civil occupations on recovery.

Only one case was admitted under each of the following headings :

(1) Concussion of the brain, (2) Somnambulism, (3) Impulsive insanity, (4) Acute delirium, (5) Moral insanity.

There was also one case admitted showing no appreciable mental disease, and he was returned to duty.

In addition to the cases already noted there were admitted three Australians who had only served in England, and also twenty-eight similar cases admitted from the Canadian Forces. These cases were all retained in hospital pending arrangements for repatriation.

The addition of these Colonials, therefore, brings the total number of cases dealt with under the heading of home troops up to 289.

Taking them as a whole, the above cases representing the home troops were a very poor type from the recruiting point of view.

CASES ADMITTED FROM THE EXPEDITIONARY FORCE IN FRANCE.

On reviewing the records of the cases admitted to the Mental Section of the Lord Derby War Hospital from the French Expeditionary Force during the twelve months from June 17th, 1916, to June 16th, 1917, I should mention that all cases were kept in hospital under treatment until they had recovered, except in the case of general paralytics, epileptics, and patients who, prior to enlistment, were found to have been in asylums. The cases shown as transfers to other hospitals were Scotch or Irish cases who were transferred to the special hospitals for mental cases at the Murthly War Hospital, near Perth, or the Belfast War Hospital respectively; also a few who were transferred to the County of Middlesex War Hospital, at Napsbury, near St. Albans, at the request of their relatives, in order that they should be nearer their homes. By reference to Table IV it will be seen that there were 1,652 admissions of which 536 were discharged home, 175 returned to duty, 143 were transferred to other hospitals, 75 were certified for asylum care, 11 died, and 712 still remained in hospital.

On looking into the various groups classified in accordance with the

official nomenclature, we find that *melancholia* stands out as the largest group, and accounts for 18 *per cent.* of cases from the Western Front. Thirty-one had a comparatively short attack, and it was thought justifiable to give them a trial on "home service," with the understanding that they would not be sent overseas again within twelve

TABLE IV.—*Showing Total Admissions and Discharges of Cases from the French Expeditionary Force classified according to their Mental Disease.*

Form of mental disease.	Totals.	Discharged to civil occupation.	Sent to asylums.	Transferred to other hospitals.	Sent to home duty.	Died.	Still in hospital.	Totals.
Hysteria	4	3	—	—	1	—	—	4
Epilepsy	15	11	—	—	3	—	1	15
Neurasthenia	99	41	2	8	21	—	27	99
Mental deficiency	233	89	2	14	14	—	114	233
Mania	135	37	3	12	16	5	62	135
Melancholia	309	114	4	18	31	—	142	309
Epileptic insanity	11	6	—	1	—	—	4	11
Mental stupor	33	3	2	7	1	—	20	33
Delusional insanity	242	73	5	20	17	—	127	242
Moral insanity	3	2	—	—	—	—	1	3
Impulsive insanity	3	—	—	1	2	—	—	3
Acute delirium	14	6	—	—	1	—	7	14
Confusional insanity	179	60	—	18	29	1	71	179
Alcoholic insanity	19	5	1	4	2	—	7	19
G. P. I.	78	4	48	2	—	1	23	78
Dementia præcox	127	26	6	13	9	—	73	127
Secondary dementia	20	9	—	2	—	—	9	20
N. A. D.	20	—	—	14	4	—	2	20
Mental instability	39	21	2	3	4	—	9	39
Cerebral syphilis	3	1	—	—	—	2	—	3
Tumour of brain	1	—	—	—	—	1	—	1
Shell-shock	63	25	—	6	20	1	11	63
Locomotor ataxia	1	—	—	—	—	—	1	1
N. Y. D.	1	—	—	—	—	—	1	1
Totals	1652	536	75	143	175	11	712	1652

months. Four were found to have been in an asylum prior to their enlistment in the Army, and were, therefore, certified again for asylum care, and eighteen were transferred to other hospitals under the provisions already stated. The trying conditions under which men of the French Expeditionary Force live adequately accounts for the large number of cases of melancholia admitted.

The second largest group of cases amongst the troops in France are those classified as *delusional insanity*. There were 242 admissions under this heading.

The following case was invalided from the Army, but able to be discharged to his civil employment :

No. 23987, Pte. S. G. W—, æt. 25, iron-moulder. Enlisted September, 1914, into the R.A.M.C., but was discharged after six months for varicocele. Started munition work, and in January, 1916, re-enlisted. Went to France July, 1916, and had some trench experience. Does not remember leaving the trenches, but woke up and "found himself" in some hospital. He then stated that an Indian had given him a yellow bead which had some mysterious properties. That this individual was following him to try and steal his wife and regain possession of the bead. He seemed to hear him outside the door, and during examination thought the Indian might hear what was being said. This was his condition when admitted to the L.D.W.H. on October 17th, 1916, and he was in a state of great agitation about the whole matter, evidently firmly believing in the story, and living in constant dread of the imaginary Indian. This man had been actually associating with Indian troops in or near the trenches in France, and was admitted to a stationary hospital, where he was diagnosed as a case of "shell-shock from mine explosion." The delusional state seems to have followed on his return to consciousness. At night in the dark he could see this Indian's face in front of him, and he was afraid to go to sleep on this account. Orientation for time and place were correct, and his memory was intact, but he had no insight into his condition. There were no neurological signs. This patient made a good readjustment, as his delusions gradually left him. He went out frequently with his wife who came to stay near the hospital, and conducted himself in a rational manner in every way. On June 21st, 1917, he was brought before a Medical Board and was discharged home.

The next largest group is represented by the cases of *mental deficiency*. This is only what one expected to find, knowing that the powers of endurance of these individuals is much below the average, and that they are to be looked upon in every way as "weaklings." I am quite aware that certain cases of mild degrees of mental deficiency have done remarkably well, and even gained promotion in rank in the present war, but they must be looked upon as the exception, and it cannot be too firmly asserted that this class of case is of no value as a recruit under ordinary service conditions. The total number of cases of mental deficiency was 233, or 14 *per cent.* of French Expeditionary Force admissions. Of these only 14 were considered fit to be tried on home service. I will quote an example of a case admitted.

No. 23092, Pte. C. E—, æt. 19, fish hawk. Enlisted April, 1915. Patient was the youngest of a family of fourteen, and his parents recognised that he had always been deficient mentally. He enlisted because he was the only one left at home, his brothers having already joined. He was in France about two months, and appears to have got as far as the trenches, but his regimental medical officer reports him as being extremely timid and quite useless. When he received any order

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he appeared dazed, and a night's bombardment completely unnerved him. He was evacuated to England, and admitted to the L.D.W.H. on August 26th, 1916, where he was found to be a typical case of extreme hydrocephalic imbecility, being unable to read or write, and naming "London" as the biggest town in Lancashire after long consideration. Asked for the name of five animals, gave "sparrow," "dog," and "swan." He could only with difficulty repeat the months of the year correctly. The marked features of his physical condition were his stunted growth—5 ft. in height, and his head circumference, which was 23 in. He was sent home to his parents on September 26th, 1916.

The next largest group is the group of *confusional insanities*. There were 179 admitted, or 10 *per cent.* of admissions from France. An example will be briefly described :

No. 64585, Pte. L. J—, æt. 40, grocer's assistant. Enlisted August, 1915. One sister subject to attacks of depression, but has not been in an asylum. Maternal aunt was in an asylum. Patient has always been a healthy and temperate man. Married fourteen years ; one boy age 13. Has had a good deal of business worry. Enlisted into the R.A.M.C. and went to France December, 1915. In the early part of June, 1916, patient was overworked, and was often for three nights in succession deprived of rest. On June 22nd he was noted as being depressed. The condition became worse, and he was evacuated to England, and admitted to the L.D.W.H. June 4th, 1916. On examination, the symptoms displayed were frontal headaches, confusion, and delusions, *e.g.*, that men were accusing him of drunkenness, cowardice, and espionage, and that he was going to be shot. These were, no doubt, the result of auditory hallucinations. Inquiry elicited that his health had been gradually failing, that he had become constipated, and could not sleep owing to noises in the head. Disorientation for time and place were present. There was some exaggeration of his tendon reflexes, but no other neurological signs. The case did well with rest and liberal diet. While convalescing he was employed in the hospital stores, and in March, 1917, was brought before a Medical Board and discharged to his civil occupation, having made a good recovery.

The next largest group is represented by the cases of *mania*.

There were 135 admissions, 37 of whom were discharged home, 3 were certified, 5 died, 16 were returned to duty for home service, and 62 still remain in hospital. The remaining 12 were transferred to other hospitals.

We will now proceed to consider the *dementia præcox group*.

There were 127 cases classed as such. The following example will be quoted :

No. 22358, Gnr. L. I—, æt. 20, an iron-worker. Enlisted April, 1915. Father was in an asylum. Patient went to France January, 1916. Was admitted to the L.D.W.H. August 12th, 1916, diagnosed as a hypochondriac. Whilst in France he said he had coughed up blood, and that he had a "choking feeling," that his bowels were seldom

open, and that the medicine given him was poisoning him. On admission, his facial expression was vacant, and at first sight he struck one as being unintelligent, but his degree of education was found to be well up to the average. He, however, made ridiculous remarks to ordinary questions, *e.g.*, asked against whom we were fighting, said "the devil." He had little insight into his condition, and his emotional reaction was very much blunted. Physically, he had rather a poor type of cranial development, and his sensibility to pin pricks was considerably impaired. *Flexibilitas cerea* was well marked, but there were no other neurological signs. Until March, 1917, the condition seemed stationary, and he required to be dressed and undressed, etc. From this time onward, however, he made considerable improvement, and on July 30th, 1917, this was sufficient to enable him to be brought before a Medical Board for discharge to his home.

This case is one of a group which have been returned as dementia præcox, and yet have made good recoveries, and I feel that in certain of them it would be more strictly correct to call them dementia præcox-like types of mental reaction, giving way under the strain of active service conditions. For the cessation of the strain seems to have removed the symptoms, and excellent readjustments have been made in cases in which an unfavourable prognosis would have been given from peace-time experiences.

The next group I shall consider is that of the *neurasthenics*. There were in all 99 cases. By reference to Table IV it will be seen that this group accounts for 6 *per cent.* of admissions from the French Expeditionary Force, and that of these 22 *per cent.* were returned to duty for home service. The following case is an example :

No. 2370, Pte. J. A—, æt. 22, clerk. Enlisted August, 1914. No history of nervous troubles in the family. Had medals for gymnastics, and was an assistant scout master two and a half years. Went to France in February, 1915. After five months' trench experience had a nervous breakdown, and was put on clerical duties. In the early part of 1916 was again sent into the trenches, and towards the end of June, 1916, he was reported strange in his manner and wandering about aimlessly. He was admitted to hospital in France, evacuated to England, and sent to the L.D.W.H. on July 21st, 1916. On admission, he was in an extremely nervous condition, complaining of pain over the precordia, and a difficulty in concentrating his attention on anything. Said his mind was continually wandering on the sights he had seen in the trenches, and he has, on one or two occasions, found himself crying without knowing why. His memory for recent and remote events was quite good. He had no hallucinatory disturbance, and he had good insight and judgment. Tremors were marked in his outstretched hands, and his deep reflexes were all increased. Pupil reactions were normal, and there were no other neurological signs. He rapidly improved, and in November, 1916, was considered fit to be discharged to home duty.

The next largest group is that of the *general paralytics*. There were 78 admissions from France, of which 2 are shown as transferred to other hospitals, 4 were allowed to be taken home by their relatives, 48 were certified for asylum care, 1 died, and 23 still remain in hospital. It will be seen that general paralysis of the insane accounts for 4.7 *per cent.* of the admissions from France, or somewhat less than the percentage in the case of the home troops, which was 6 *per cent.* In Table II it will be seen that the total admissions of this form of mental disease from all sources was 112, or 4.6 *per cent.* (³)

This group occupies the premier position with regard to cases transferred to asylums. Out of the total of 154 cases so transferred up to the end of the first twelve months 66, or 42 *per cent.*, were cases of general paralysis. Lest there should be any doubt as to the accuracy of the diagnosis in these cases the clinical findings have been checked by the Wassermann test in nearly every instance, and I now propose to give the results. (Table V shows these in tabulated form.)

TABLE V.—*Wassermann Results in Cases of G.P.I.*

Blood examinations.—100 cases gave + reaction in 92 and — reaction in 8. Of these:

- 3 + fluid (bloods converted).
- 1 (?) fluid.
- 2 — fluid.
- 1 — fluid, — globulin, and — cell count.
- 1 fluid not examined.

Cerebro-spinal fluid.—In 92 cases examined there was + reaction in 84 and — reaction in 8. Of these latter

- 5 gave + blood reactions.
- 3 gave — blood reactions.

Globulin test.—In 39 cases examined the reaction was + in 38 and — in 1, corroborating all the other tests.

Cell count.—37 cases showed a leucocytosis out of 39 examined.

In only one case were all the results negative.

Both the blood and cerebro-spinal fluid were examined in most cases, and since February, 1917, the globulin test and cell count have been added. Out of the total of 112 cases the test was done in 100. The blood examination gave a positive result in all except 8. Of these 8 negative blood results, 3 were associated with the positive fluid reaction, and were evidently bloods converted by treatment. In a fourth case the fluid was a doubtful positive. In 1 case the fluid was not examined, and in 2 cases both the blood and fluid were definitely negative. In the remaining case the globulin test was also negative, and there was no leucocytosis.

The cerebro-spinal fluid was examined in 92 cases, and found positive

to the Wassermann reaction in all but 8. The 8 cases in which it was not examined had all positive bloods except 1. Of the 8 negative fluid reactions 5 were associated with positive, and 3 with negative blood reaction.

The globulin test and cell-count were done in 39 cases. The globulin reaction was negative on one occasion, corroborating the findings of the other tests, and positive in the 38 remaining. In one of these the blood was negative, and there was no pleocytosis, but the fluid gave a slight fixation. In another the blood was positive, the fluid gave a slight fixation, but there was no pleocytosis on the first occasion. On repetition of the tests two months later however, all were positive.

With regard to the cell-counts, there was a pleocytosis in all the 39 cases except for the 3 cases just mentioned, 1 of which, on repetition of the test, gave a definitely positive result. Any count over 10 per c.mm. was looked upon as abnormal, but the average was 60 or over.

I have to thank Capt. W. Parry Morgan, R.A.M.C., the pathologist to this hospital, for the above results. (3)

The following case will serve as an illustration :

No. 20956, Pte. N. G—, æt. 39, blacksmith's assistant. Enlisted into the Army at the age of 19, and served in the South African Campaign in 1901. His medical history sheet shows that a month after his enlistment he contracted a syphilitic sore. In 1904 he went on the Reserve, and was called up again on August 5th, 1914, at the outbreak of the present war, since then his conduct sheet contains numerous entries for "absence without leave," "drunks," and "riotous conduct." There are seven such entries in one period of five months, and six in another similar period. He was wounded by shell at La Bassé in May, 1916, and in October, 1916, he was medically examined at Lucknow, and thought to be suffering from "shell-shock," for which he was evacuated to England. He was eventually admitted to the L.D.W.H. on February 24th, 1917. Here he was found to have all the signs of general paralysis. He had well-marked tremors of his tongue and facial muscles, his speech was unintelligible and inarticulate, and his mental condition was approaching dementia. His deep reflexes were much exaggerated, and his pupils Argyll Robertson in type. His Wassermann test gave a positive reaction in both his blood and cerebrospinal fluid on February 27th. There was a definite pleocytosis, and the globulin test was also positive. The case took the usual course. He showed rapid deterioration mentally and physically, and on March 14th, 1917, died in hospital.

This case shows the date of the primary infection fifteen years before the onset of the symptoms of general paralysis of the insane, as is frequently illustrated in cases where the Army medical history sheet covers this period.

"*Shell-shock*" will now occupy our attention.—There were 63 cases. The following is a typical example :

No. 5928, Pte. Y. A—, æt. 42, sawyer. Enlisted August, 1914. Was twenty-four months in France, and his N.C.Os. give him the character of having always been a very smart soldier. Had only one period of three days' leave. Was buried by a shell in July, 1916, being the sole survivor of a blown-up traverse. He was sent down to the base through a Field Ambulance and Clearing Station on July 27th, 1916. On August 1st, 1916, he was reported missing, and on August 3rd found wandering at Amiens. On examination by Col. Myers, R.A.M.C., he was unable to give any account of himself other than his name, and was found to be in a confused semi-stuporose condition due to "shell-shock." On admission to the L.D.W.H. on October 14th, 1916, he was returning to his normal condition. He said he had been blown up and buried, and that when he was taken to hospital he was in a dazed condition. He was suffering from very severe pain in the head, and did not know what he was saying. He conducted himself well on parole for many weeks, and was finally discharged home on April 11th, 1917.⁽⁸⁾

The next largest group is that of the cases of *so-called mental instability*. This is a term that has been used to denote cases which are liable to recurrent attacks, and there were in all 39 recorded as such. Only 4 were returned as fit for service again, even for home duty, and 2 were sent to asylums, having been previously under asylum care.

There were 33 admissions of cases of *mental stupor*, and of these 20 still remain in hospital. Only 1 has been returned to home duty.

There were 20 cases of *secondary dementia*.

Of these, 9 were discharged to their home, 2 were transferred to other hospitals, and 9 still remain in the L.D.W.H. Time and space will not permit of any further consideration of these two groups. The type of cases included in them were in no way different to those so commonly met with in asylum practice.

The N.A.D. cases will, therefore, be next considered.

These cases were admitted as "Mental," but on examination and detention showed no appreciable mental disease. There were in all 20 admissions of this kind from the French Expeditionary Force or 1.2 *per cent.* of admissions. Of this number, 14 are recorded as having been transferred to other hospitals. They were really transferred to the surgical or medical wards in the L.D.W.H. according to their condition, which had been wrongly interpreted as mental. Four were returned to home duty, having nothing the matter with them.

Alcoholic insanity accounts for 19 of the cases from the French Expeditionary Force, or 1.1 *per cent.* of the total admissions. The small percentage of alcoholic cases reflects very great credit on the abstinence of our Army in the field. No case admitted to the L.D.W.H. since its opening seems to have had its origin whilst in war service. Lord Kitchener's advice has evidently not fallen on deaf ears as far as my observations have been able to discover.

The next group is that of the *epileptics*.—There were 26 cases. Fifteen did not show any marked mental symptoms, and 3 of these were given a trial on home duty. One was still in hospital at the end of the year awaiting transfer to an epileptic colony, and the other 11 were discharged to the care of their relatives. Eleven cases were of the nature of epileptic insanities, 4 of whom are still in hospital. One was transferred to another hospital, and 6 recovered sufficiently to justify their discharge to the care of their friends.

In only 2 cases of this group was there any history of "head injury," and in 1 of these the notes show that the fits developed after a fall of timber on the head whilst the patient was in a dug-out. On examination, however, no evidence could be detected of any damage to the skull, and, on further inquiry into the history, attacks of "petit mal" were found to have started seven years previously. Only one case, therefore, appears to be of the nature of a true "traumatic epilepsy," and I will quote this as an illustration.

No. 1775, Sergt. S. J—, æt. 30. Enlisted in November, 1902, and served in South Africa till 1904, when he went to India. Was there till 1909, when he returned to England. Took his discharge with the rank of Corporal in 1913. In August, 1914, he re-enlisted. At Loos, in July, 1916, he was severely wounded in the head by shell, and was unconscious till he arrived at Dover, and from there he was sent to hospital in London. On admission there on August 4th, 1916, he is described as having a healed semi-circular scar nearly the size of the palm of the hand over the posterior part of vertex of skull. He complained a good deal of pain in the back of the head, but had no paralysis. His pupil reactions were normal. Mentally he had a complete retrograde and partial anterograde amnesia. In December, 1916, he attempted to throw himself under a train, and later he was discovered with a razor hidden in his bed. He was eventually admitted to the L.D.W.H. with the report that he had become very depressed, and had expressed the idea that life was not worth living. On admission to this hospital he said he felt quite well, and blamed the nurses in the London Hospital for his transfer, saying that they did not understand him. He admitted that when he arrived in London he could not remember any details of his past life, and that everything seemed blank, but said that since then his memory seems to have come back all right. He did not complain of headache, or giddiness, said he slept well and felt well in every way. He denied having had any liquor since his head injury. On examination of his skull he was found to have a large depression in the upper and back part of his right parietal region extending right up to the vertex. The bone was absent over this area, and pulsation could be plainly felt on palpation. X-ray examination showed a trephine opening about $1\frac{1}{4}$ in. in diameter. No metal was present. Three months after admission he complained of biting his tongue frequently in his sleep, and a few days later he had a "fit" whilst in the hospital grounds, following which he was in bed for a few days with a definite paresis of his left leg. This passed off and he was

able to be up and about again as usual in a short time, but his mental condition became much more irritable, and he seemed to be distinctly developing the epileptic temperament. He still remains in hospital.

Out of the total number of epileptics admitted to this hospital during the period under review, *viz.*, 41 cases (see Table II), there was only one other case of true "traumatic epilepsy," and this was the case of a Canadian who died in the status epilepticus twelve months after a gunshot wound of the frontal region from which an abscess had been evacuated by operation. In this connection I should like to mention that out of a consecutive series of over fifty cases of head injury received in action which I have investigated, the two cases here mentioned are the only instances so far of true traumatic epilepsy.

The next group is the one shown as *acute delirium*.

There were 14 cases recorded during the year. These were all of the post-febrile variety, following on some acute illness or suppurating wounds, and the following is an example.

No. 15/37904, Pte. C. T—, æt. 42. Enlisted April, 1916. A labourer. Went to France in July, 1916. Patient was admitted to hospital about February 10th, 1917, with pneumonia following an attack of bronchitis ten days previously. On February 17th his temperature reached 104.8° F., and he became acutely excited, rambling in his conversation, and quite irresponsible. His temperature came down by crisis on February 20th, and he was evacuated to England and admitted to the L.D.W.H. on March 2nd. Here he was found to be in a very weak, highly nervous condition, but his acute excitement had considerably quieted down. He could not remember anything of his acute attack except that he seemed "to lose his head." He progressed satisfactorily, and at the end of the year (June 16th, 1917), although still remaining in hospital, he was convalescent and awaiting his discharge.

Under the heading of *hysteria* there were grouped 4 cases. Three of these were discharged from the Army to their civil occupations, and one was returned to duty on home service.

The following illustration will suffice :

No. 9398, Pte. J. A—, æt. 21. A butcher. Enlisted September 13th, 1913. Went to France in August, 1914. Wounded in the shin in September, 1914. On December 15th, 1916, he stuck in the mud on the Somme for over twenty-four hours, and was quite exhausted when he was pulled out. On arrival at hospital he found he had lost the use of his legs. He improved with rest, and was able to get about a little after a week or two, but on January 2nd again became paralysed in the legs. He was evacuated to England on January 12th, 1917, and admitted to the L.D.W.H. Here he complained of pains in the back and legs, and great weakness in the grip of both hands. He also had severe attacks of headache at times. On February 18th he had a fit of an hysterio-epileptic nature, during which he threw himself about and attempted to bite his arms. In March he was still in bed, and when

placed on his feet he at first slipped down and made no attempt to walk, but with the support of two orderlies he could walk quite well. There was no wasting of muscles and no tenderness in the limbs. He continued to have hysterical fits, chiefly at night, up to the end of March, but since then has had none. On May 25th he had completely recovered, and was discharged to his civil occupation.

There were 3 cases returned as "*Moral Insanity*," and of these 2 were discharged to the care of their friends, and 1 still remains in hospital. In one of these the moral side of his character seems to have been definitely affected since a gunshot wound of his head, received whilst sniping in a shell-hole near Guillemont in September, 1916. He was a boy æt. 19, who was unreliable in his statements and told lies in the most barefaced manner possible, which was stated by his father and schoolmaster to be a complete change from his former disposition.

For the other two cases there was a definite history of insubordination and moral deficiency prior to enlistment. One had been six years in a reformatory for larceny, and the other sent to a truant school for absenting himself from school as a boy. Both had run away from home as boys, had been discharged from the Army and re-enlisted, and had been arrested for desertion in France. One also effected his escape from this hospital. In one of these cases the family history was not known, and in the other the patient's maternal aunt was in an asylum. Both had degenerate faces, with coarse features and poor cranial developments, but both described themselves as feeling perfectly well; were alert and replied smartly to questions, and showed a fair amount of school knowledge. They were extremely plausible, and rarely at a loss to explain anything away which was contrary to custom. They seemed proud of their past criminal records, and at the same time professed good resolutions for the future. One boasted that a special Salvation Army pamphlet had been written about him, and was anxious that the doctor should read this. Neither of the cases seemed able to discriminate adequately between right and wrong, and could not be trusted in anything they did or said. It was certainly a wise proceeding to evacuate these cases from the Front, as it is impossible to estimate what mischief they might have caused. One had already obtained the distinction of throwing a bomb at an officer, and gave as an excuse that the officer swore at him.

There were 3 cases diagnosed as "*Impulsive Insanity*," and of these 2 were returned to duty for home service, and the other was transferred to another hospital. The following is a brief description of these cases :

One patient was in hospital suffering from nephritis, and because he was kept on milk and not allowed to have any ordinary diet he threatened to commit suicide, became emotional, refused all nourishment, and generally abused the medical and nursing professions.

The second case was on his way up to the Front, and entered the wrong train. On being ordered out of the railway carriage by an officer he threatened to shoot him. He was disarmed and sent to hospital, and became very excitable and emotional about being kept from joining his unit. He quickly quieted down again.

The other case had been gambling and lost his money, and as a result had attempted to shoot himself with a revolver. The kick averted the barrel, and the shot only hit his cap. He ascribed his depression to the loss of his money, and said that the thought of suicide came as a sudden impulse. He showed no further signs of loss of control whilst under observation and has returned to duty.

There were 3 cases of cerebral syphilis, of which 1 was discharged to his civil occupation, and 2 died. An example of the latter is as follows :

No. 503467, Pte. H. J—, æt. 28. Admitted to the L.D.W.H. August 31st, 1916, in an exhausted debilitated condition, lying motionless in bed, and requiring spoon-feeding and every attention. Had some left facial and upper arm paresis, and a left external rectus paralysis, but seemed to be able to move the left leg fairly well. Pupils equal, and reacted to light. Both discs well defined and of normal colour. Surrounding fundi normal. Mentally he was disorientated in time and space, and was in a generally confused state. Said he had been sent to hospital in France because a pole hit him on the head. Now asked permission to go to his dépôt for money to buy some fruit, which he said would make him feel "good," and he was quite sure he could make the journey, although his bedridden condition was pointed out to him. His Wassermann reaction in the blood and cerebro-spinal fluid was positive. He was put on mercurial treatment, and on October 13th had a generalised convulsion with stertorous breathing and unconsciousness, lasting about ten minutes. This was repeated on the 23rd inst., and the patient was then obviously going down hill very rapidly. He gradually became weaker, and on December 10th died.

There was only one case of *brain tumour*, and this patient died in hospital when the diagnosis was confirmed at *post-mortem*, and the tumour found in the left temporo-sphenoidal region.

There was one case of *locomotor ataxia*, who had been six months in France, and returned to England with some memory defect and general mental deterioration.

The only remaining case to mention is that of a man returned from France as "shell-shock," the confirmation of which has not yet been established, and is therefore returned as not yet diagnosed (N. Y. D.).

The above groups account for the 1,652 cases admitted from the French Expeditionary Force, but there were in addition the following admissions from other sources :

The troops from Mediterranean, 14 ; Mesopotamia, 63 ; Egypt, 141 ; Salonica, 97 ; East Africa, 4 ; Cameroons, 1 ; Pensioners, 6 ; Officers, 1.

The latter was taken as an emergency case owing to lack of accommodation elsewhere.

The above admissions, added to those from the French Expeditionary Force, brings the grand total of admissions from overseas forces during the year to 2,140.

In comparing the various forms of mental diseases in the different expeditionary forces as just enumerated, it is found that the highest percentage of confusional insanity occurred in the cases from Salonica and France. There were 16 *per cent.* from Salonica, 10 *per cent.* from France, 7 *per cent.* from Mesopotamia, and 6 *per cent.* from Egypt. The cases from Salonica were all of the nature of exhaustion psychosis following attacks of dysentery and malaria, the latter being the more common.

Several of these were of the polyneurotic variety, exhibiting Korsakow's syndrome. The comparatively high percentage from the French Front is accounted for by the inclusion of cases which were probably true shell-shock. Owing to the absence of any definite history of shell-shock accompanying them from overseas in their records, however, it was not considered justifiable to diagnose them as such, and they were therefore returned as "confusional insanities."

SUMMARY AND CONCLUSIONS.

Admissions.—The total number of admissions from overseas was 2,140. This number, added to the total admissions figuring as "home troops," which has been shown to be 289, brings the full number of patients admitted to the mental division of this hospital for the first twelve months up to 2,429. Of this number 1,466, or 60 *per cent.*, were discharged, and 963, or 40 *per cent.*, remained in hospital at the end of the twelve months. This latter figure will be seen to be reduced to 390 four months later by referring to the last column of Table 1 (⁵).

Discharges.—Out of the 1,466 discharges 247, or 16.9 *per cent.*, were thought fit to return to duty again for home service. A circular letter was addressed to the friends of 170 of these cases some months after their discharge, inquiring into their progress. Replies were received from 123, and the information obtained showed that 68, or 55 *per cent.*, were keeping fit and well, and of this number 28 had already returned to France on active service. In 27 instances the reply showed that the men were still on duty, but in an unstable condition, and 19 were shown to be in hospital again. In 10 instances the reply was to the effect that the men had been discharged the service, and 5 replied that they could give no information.

The number of cases discharged from the hospital by a Medical Board to their civil occupations was 823, or 56 *per cent.* of the

total. Inquiries made from the other mental sections in England and Scotland showed that only 4 had been admitted there who had been discharged from this hospital, and the number of re-admissions to this hospital only amounts to 5. It was found necessary to certify 154 cases (10 *per cent.* of discharges, or 6 *per cent.* of the total admissions), and nearly half of these have been shown to be cases of general paralysis of the insane. The remainder had been in asylums prior to enlistment, or were cases associated with epilepsy.

Treatment.—The usual asylum treatment was adopted as a matter of routine, but the relatively larger proportion of medical staff to patients, and the greater facility for massage and any specialised treatment than is customary in present-day asylum practice, I feel sure contributed largely to the high percentage of recoveries. Much more individual care and attention was possible on the part of the medical staff. Each medical officer had his own room for private examination of cases, thereby assuring the patient that his statements would be treated in confidence. During the interview explanations could be given to each case as to the nature of his illness, and he could be shown how to regain his normal condition. Confidence inspired like this has proved a great help in early cases. Beds in the open air were provided for those to whom it was thought rest in bed would be beneficial. As soon as convalescence was established, patients were recommended for parole, and allowed to go about by themselves in the hospital grounds and into the neighbouring town, provided they returned to hospital at the specified time. This privilege was much appreciated, and very rarely abused. The average number daily having this freedom from lock and key was 150.

Occupation.—Employment on the farm and in the gardens of the hospital has been encouraged for suitable cases. About 80 to 100 patients daily have been so employed. Advantage has also been taken of the workshops belonging to the hospital, and any man having a special trade was given facilities for working at this during his period of convalescence, thus preparing himself for the work he was going to take up again in civil life on his discharge from the Army. This has helped in a large measure to establish the man's self-confidence, but I feel I should also add that the patient's convalescence must be first firmly established, otherwise it is sure to prove a failure, and the end result will be a confirmation to the patient of his disability and a protraction of the case.

Wassermann tests.—There were 269 cases so examined between September, 1916 (when this was first started at the Lord Derby War Hospital), and June 16th, 1917. Out of this number 209 cases had the examination done both in the blood and cerebro-spinal fluid, but in 60 the blood only was examined.

Conclusions.—The cases received were all in the early stages of mental disorder, with the exception of the mental defectives, and even in these cases many of them showed acute symptoms superimposed on the congenital defect. A fair comparison, therefore, of the percentages of recoveries with those of civil asylum statistics cannot be made. Further, many of the cases admitted would not have been certified for asylums in civil life, and this seems to be supported by the low percentage of general paralytics in comparison with the figures available from the report of the Commissioners in Lunacy. Many of the neurasthenics and shell-shock cases would not have been included in the uncertifiable, but it will also be seen that, strictly speaking, the only cases which did not show any mental symptoms amounted to 25, or only 1 *per cent.* of the admissions. Experience gained amongst this large number of uncertified mental cases in the early stages of the disorder convinces me that the treatment of such conditions in receiving hospitals other than asylums would, if properly and carefully organised, save a large number of cases from the stigma of certification.⁽⁶⁾ The first essential would be an adequate medical staff to allow individual attention to every case. It has been a striking feature of the wards in the mental section of this hospital since its opening that where this was given the most contented patients were to be found. The mere visit of the medical officer to the wards and the official "walk round" is not the way to help any cases suffering from mental disorder. It is necessary to obtain a thorough insight into the nature of each case by confidential talks with the patient, and to find out the particular circumstances which have given rise to the symptoms presented. An explanation of the same to the patient will help him to gain an insight into his condition, and it is idle to pretend that such a procedure is unnecessary, and to urge, in extenuation of the omission to search for causes, that some cases recover under "quiet" and "rest."

I have to express my thanks to my colleague, Lieut. E. G. Grove, R.A.M.C., for much time spent in reviewing the manuscript of this article, and for many valuable suggestions and alterations. My thanks are also due to Lieut.-Col. Simpson, R.A.M.C., Officer Commanding the Lord Derby War Hospital, and Col. Aldren Turner, C.B., A.M.S., Consulting Neurologist to the War Office, for giving me facilities for compiling these statistics.

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(¹) Paper read at Spring Meeting of the Medico-Psychological Association (Northern and Midland Division) at the County Asylum, Rainhill, April 18th, 1918.—(²) The Commissioners in Lunacy's Report for the year 1913, Table XIX shows that of the total male admissions into all institutions for lunatics during the five years 1907-11, general paralysis accounts for 12 *per cent.*—(³) Flemming's method was used as a control to the findings obtained by the original Wassermann method, modified by the use of human blood instead of that of the sheep and guinea-pig.—(⁴) Further observations on cases associated with “shell shock” have been recorded in another article, see *B. M. J.*, April 13th, 1918.—(⁵) Of this number only 101 patients had been resident twelve months.—(⁶) See letter to the *Lancet* of November 24th, 1917, by Sir Robert Armstrong Jones, Major, R.A.M.C.

Clinical Notes and Cases.

Clinical Observations on the Various States of Excitement in Insanity.(¹) By R. M. TOLEDO, M.D., Assistant Physician, Government Lunatic Asylum, Malta.

MR. PRESIDENT AND GENTLEMEN,—Of the many hundreds of insane, remitted annually to mental hospitals, the majority are admitted in an “excited state.” They all exhibit in common several of the characteristic signs of what is known as “mania,” yet very few of them are really “maniacals.”

My object this afternoon is to point out to you certain signs and symptoms which may help to decide, as early as possible, of the true nature of insanity from which a patient, brought to us in an excited condition, is suffering from. It is evident how this is important for the proper treatment of the patient himself and for the protection of others.

Very often a patient is received exhibiting restlessness, resistiveness, and incoherence of speech. He may answer to your questions rationally or perhaps not. He generally succeeds to give you his name correctly and those of his parents or children.

Another patient, “excited” as the first one, fails altogether to answer you; he is unable to tell you his name or from where he comes. He does not even take any notice of you and of his surroundings, he utters

incoherent words, and seems to see "objects." The first case is probably one of real mania, the second one of confusional insanity, or amentia, as it is often called.

The maniac very seldom loses all his power of attention, and, although he distracts himself easily from rapid fatigue, yet the doctors succeed in getting from him one or two sensible answers.

On the contrary, nothing can distract the ament from his "dreamy state," he is totally dissociated from the world, and he even fails to feel the stimuli of his "vegetative" life. He does not care to nourish himself, he wets his bed, and his habits are dirty.

The maniac is rarely of wet habits, asks for food continually, and everything attracts his attention. He makes remarks about your clothes, about the features of the attendants, about the books, lamps, and clocks he may have noticed in your office. He recognises familiar faces.

One of the most characteristic signs of "amentia" when the patient is not altogether lost to his surroundings, which happens when he is not at the pitch of the disease, are "mistakes of identity." I remember a seaman who after a fortnight of regular "dream consciousness" commenced to answer simple questions. He believed he was still on board, and mistook me for the master of the ship. He thought he was "sea-sick," and he was surprised of feeling so after "twenty years of seafaring."

The relatives of the maniac may inform you that some time previous to the attack the patient was dull, avoided his friends, and refused to go out; those of the ament, that the symptoms came on suddenly during the convalescence of influenza, measles, or rheumatic fever, or that he had just lost a considerable quantity of blood. I know a case that came on "twice" within three years after a most severe epistaxis. It may be the case of a woman nursing her baby.

While mania is of a toxic nature, amentia is due to an insufficient nutrition of the neurone and its exhaustion.

Our next patient is perhaps between the age of 50 and 60. He reaches the hospital screaming. He very often refuses to leave the cab. Looks frightened and stares at everybody. Has an anguished expression in his look. He is perhaps trembling. He will not sit down, but paces the room continually. If you question this man, he answers coherently, and if by way of introduction you ask him to put his tongue out or to feel his pulse, he very often tells you that he feels a pain in the region of his heart, one of the most distressing subjective sensations accompanying mental anxiety. This patient may think that you are the magistrate or the police inspector and the place he was brought to a prison or a court of justice. You should never, in the presence of such patients, go through their admission papers. They

think you are reading an order to send them to the scaffold or to burn them alive. Some hear distinctly the voices and the shrieks of their far-away children. The noise of an approaching cab, the ringing of bells, the working of an engine, increase their anxiety. Such patients may tell you that they have been falsely accused of the most horrid crimes, and that the neighbours have been gossiping about them for months. They refuse to keep their bed and to take nourishment. If their breath becomes offensive, feed them forcibly at once, as they exhaust themselves very rapidly. Needless to say, all this symptomatology points to "acute melancholia," as, although such sufferers are nearly always "very excited," yet one can see clearly that there is always a decided depression in their emotional attitude.

Now I must speak to you about a very serious disease which at its onset is very often mistaken for simple mania. I refer to dementia præcox, a disease which is unfortunately very common and almost incurable. It is in what it is called the "predemented stage," that this disease is often taken for mania, or, if "hypochondriasis" prevails, for neurasthenia.

Patients are generally brought to the asylum in a restless condition. They are incoherent in their talks and troubled with auditory hallucinations. Very often the relatives will tell you that the patients have been smashing tumblers and plates at home without any motives and without exhibiting any anger or the least sign of emotion. This is characteristic of the disease, and differs much from the way the maniacal exhibits violent tendencies.

The maniacal fights those around him, especially if he is interfered with in any way, does not give reasons for his acts, at times he ignores them; the præcox finds an old man in a corner and slaps him, and if you ask him why he did it he perhaps tells you that the old man has been sneezing too much, or that he was an enemy of his grandfather. I know of præcox patients whose "silly" behaviour in prison has been mistaken for simple insubordination. As at times, there is very little apparently indicating "insanity," they are often considered as lazy and insubordinates and severely punished.

Both the maniac and the dement may commit rash acts, but while the former is unable to explain them, the latter is quite ready to find a "motive."

The following two cases illustrate how absurd these "motives" can be:

CASE 1.—A lad, while coming from England, jumped into the sea as the steamer was approaching St. Paul's Bay. It was a January evening and bitterly cold.

He was rescued by a fishing-boat not very far from the shore and sent straight to our asylum as "suicidal." I received him about mid-

night, and he laughed heartily on being told that he was sent to the asylum as the doctors thought that he wanted to do away with his life.

He assured me that he jumped into the sea to have a good swim before landing. In fact, he swam for a good distance, about a mile, before being picked up.

CASE 2.—A lad was sent to us as a suicidal. He was wounded in the face, having jumped from a high window. He told me that he did so to pick up a cigar which he had noticed on the pavement.

There was very little at that time to diagnose *præcox*; few months have sufficed to make of these two lads a complete mental wreck.

If one follows a maniacal and a *præcox* in the wards, he will soon notice how differently they behave in their excitement. The maniacal passes his time jumping on tables and dancing. The dement spends his hours going round the same chair for hundreds of times, or walking on tip-toe, or kneeling down. It is characteristic how they can keep for whole hours the same attitude, however uncomfortable this may be. They are very fond of corners, putting their faces against the wall.

The maniacal likes to kick, the dement to slap or to bite. Others spit in one's face.

At table the maniacal swallows his diet in a minute, the *præcox* takes a full hour to do it, some keep the last morsel in their mouth till the next meal.

While the maniac sleeps very often quite naked, the dement likes to muffle himself up with many blankets.

You should be very careful in approaching a *præcox* while he is in bed. He may strike you, simply to show you that he is not asleep.

One of the most characteristic signs of *præcox* is resistiveness. Try to bend the arm or the head of your patient or to open his mouth or hand you seldom succeed. You feel them hard as iron.

Laboratory investigations have proved that this muscle over-tension is due to a toxin similar to adrenalin, the effect of a disturbed gland metabolism, and at *post-mortem* examinations, degenerative changes in the supra-renal glands, testicles, and ovaries have been noticed.

Præcox gets generally very, very stout. Loss of weight should induce one to examine the patient for tubercle of the lung, as they are much predisposed to this disease.

I fear that my paper would be considered incomplete if I fail to refer to a mental condition resembling acute mania, which at times appears at the very onset of several infectious diseases. It is known as "acute delirium," and is characterised by extreme restlessness, incoherence of speech, and hallucinations of sight and hearing. It has nothing to do with febrile delirium. The temperature is never high, and is very often below the normal.

The acute delirium does not generally last long, if it lasts the general

condition of the patient gets worse rapidly, and collapse and death follow. The Germans call it "collapse delirium."

I have seen several cases in connection with Mediterranean fever and enteric fever. Three cases ended fatally, including a case of erysipelas of the arm.

The following two cases are of interest :

CASE 1.—A man was found by the police in the street almost naked. He was gesticulating and screaming and in the act of fighting imaginary objects. He was taken to the police-station, where he was very restless and clamorous. The doctors remitted him to our asylum as a case of mania.

On reception the temperature was 100° F. He was not clamorous, but he was muttering incoherent words. He was unable to answer questions. The examination of the chest revealed lobar pneumonia. His wife stated that the patient had returned from work on that day complaining of headache. The next day the delirium disappeared and the temperature rose to 103° F. The patient was quite sensible in his answers, and he was able to give to his wife important instructions. He died the day after from collapse.

CASE 2.—A private of the Royal Militia was sent to us from a military hospital for acute mania. He was received at 8 p.m. in a very restless state. He spoke incoherently, and passed fæces and urine involuntarily. Temperature on admission 99° F. He could not answer any questions. He passed a sleepless and restless night. Early next morning the delirium disappeared, and when I saw him about six o'clock he asked me where he was and how long he had been in. He remembered that on the previous day he vomited twice and that he was removed from Gargur Camp to Valetta Hospital. He did not remember anything else and wished to be left alone. He complained of pains in the back and headache. The case proved to be one of cerebro-spinal fever. The patient was removed to the isolation hospital of Imtarfa, where he made a good recovery, remaining, however, completely deaf.

Want of time does not allow me to point out in detail how often senile dementals and alcoholics and sufferers of such neuroses as epilepsy and chorea are admitted to our wards in a state of excitement.

Each of these diseases has its own symptomatology, and there should be no difficulty in arriving at a correct diagnosis if a careful history is taken of the case.

(¹) Read at the General Meeting of the Malta Branch of the British Medical Association on January 21st, 1918.

Part II.—Reviews.

Sixty-sixth Report of the Inspectors of Lunatics (Ireland) for the year ending December 31st, 1918.

This report, like its predecessor, appears in much attenuated form. In pre-war days it used to extend to over 200 pages; in this report they number only 83. The reduction in size is, however, mainly due to the omission of the Inspectors' Memoranda on individual institutions, which took up a considerable space. The report itself is also somewhat curtailed, and a few of the statistical tables are omitted.

Although caution is still advisable in order to avoid hasty conclusions, there seems but little reason to doubt that insanity in Ireland is definitely on the decrease and that the turning-point has been at last reached. The Inspectors have again to report a reduction in the number of insane under care, and a very substantial decrease as compared with that of the previous year, the decrease for the two years having been 77 and 337 respectively. It is curious that in 1915 the reduction in numbers was confined to males, while the females showed an increase, whereas in 1916 the opposite was the case. The total number under care at the close of the year was 24,766 as compared with 25,103 in the previous year.

A table on p. viii gives the proportion of insane under care per 100,000 of estimated population in quinquennial periods from 1880 to 1914, during which period the ratio rose from 268 to 566, or practically double. But if the percentage increase in each successive five-year period be computed, we get the following series of figures:

	Proportion per 100,000 population.	Percentage increase.
1880-1884	268	—
1885-1889	312	16·41
1890-1894	366	17·30
1895-1899	433	18·30
1900-1904	499	15·24
1905-1908	541	8·42
1910-1914	566	4·62

This table shows a large reduction in the rate of increase during the 15 years 1900-1914. In 1915 the ratio was 579, an increase of 2·29 *per cent.* over that of the previous quinquennium, while in 1916 there was, for the first time, an actual decrease in the proportion of 571, a reduction of 1·38 *per cent.* These figures are highly significant, and may, we think, without much risk, be taken as a positive indication that in Ireland insanity is on the decline.

This conclusion is supported by the fact that there was a reduction in the number of admissions of 171, district asylums showing a decrease of 141 and private institutions of 30, the decrease being wholly confined to female patients, while the male admissions showed an increase of 6. The diminution in the ratios of admissions to population has been going on for a number of years, the percentage decrease of each of the quinquennia 1905-1909 and 1910-1914 having been 3·49 and 2·41 for

total, and 2.94 and 3.03 for first admissions respectively. This relative reduction in the ratio has been practically maintained during the last two years, the figures for 1915 and 1916 being 3.7 and 3.84 for total, and 3.12 and 3.22 *per cent.* for first admissions respectively. From these facts there would seem to be but one conclusion.

The daily average in district and auxiliary asylums shows a reduction of 63 males and 51 females, a total decrease of 114, this being the first occasion on which a decrease could be recorded.

As regards the forms of insanity, by far the large majority were of mania and melancholia—1,247 maniacal and 1,057 melancholic cases—the former being in a considerable preponderance.

With respect to causation, heredity was assigned as a principal cause in 876 cases, a ratio of 26.8 *per cent.*, and as principal or contributory in 1,147 cases, or 35 *per cent.* Alcohol appeared to be the principal cause in 280 cases, or 8.5 *per cent.*; as principal or contributory in 383, or 11.7 *per cent.* These are comparatively low ratios, but only what might have been expected from the scarcity and greatly increased cost of all alcoholic beverages, which puts anything but the most moderate indulgence, if any, out of the reach of the vast majority of people. It has often been said that you cannot make people sober by Act of Parliament, but lunacy statistics, at any rate, appear to show that intemperance is minimised when the facilities for indulgence are reduced.

Mental stress was assigned as a principal cause in only 11.9 *per cent.* of the admissions, as compared with 13.16 in the previous year. The cases in which it was said to play any part were 17.5 *per cent.* of the total, as against 19.22 *per cent.* in 1915. This factor, therefore, shows, as regards its influence in the causation of insanity, a decided falling off. The cases in which the war was assigned as the principal cause were 17, being 0.48 *per cent.* of the total, as compared with 12 or 0.32 in the previous year. The total number in which it acted as either principal or contributory cause was 30, while in 1915 it was 44, showing a percentage of 0.85 and 1.19 respectively. One hundred and two soldiers and sailors were admitted, in whom the war was considered to be a cause of their insanity, but the Inspectors are of opinion that no conclusions can be drawn from the figures, so few cases of men who have been on active service have been sent to district asylums.

Of a total of 3,268 admissions, 1,942 were committed as "dangerous lunatics," or nearly 60 *per cent.* It is as surprising as it is regrettable that this objectionable method of dealing with the insane of the humbler classes should continue to be in force in Ireland, the only country in the world where such a method is sanctioned or would probably be tolerated. Seventy or eighty years ago, before the true nature of insanity had been properly grasped by the public generally, some justification for action of this kind might have been forthcoming—for instance, in the case of violent patients. In this twentieth century and in the light of our present knowledge, imperfect though it may still be, there is absolutely no excuse for the perpetuation of such a system. An insane person is suffering from disease or disorder of the brain—a patient, in fact, just as much as anyone suffering from disease of any other organ—heart, liver, etc. Because such a patient, say a woman, threatens to take her own life when in a condition in which she is not responsible

for her actions, is that any reason why she should be arrested as a criminal, haled before two magistrates and committed on warrant by them, and sent to an asylum in charge of police? There is often, especially in remote districts, considerable difficulty in getting two magistrates sitting together, which involves delay and bringing the unfortunate patient about from post to pillar in search of the proper authority. It is little short of cruelty to the person principally concerned, not to speak of the ignominy incurred by having to submit to these measures, which many patients are quite sensitive enough to feel. The whole proceeding is a totally out-of-date method, an anachronism, which admits of no defence in the present day. It is a blot on the legal procedure of this country and should be abolished, and the procedure in such cases assimilated to that in use in other civilised countries.

The percentage of recoveries on admissions was 40·6, or 2·4 higher than that for the previous year. The ratios in different asylums differ to an almost astounding degree, from the lowest, 12·4 in Sligo, to a maximum of 86·3 in Monaghan, where the male recoveries reached the amazing proportion of 100 *per cent.*! We cannot but think that the term "recovery" must have a different meaning, or that a different basis for estimating recoveries is adopted, in the several institutions.

The death-rate also differs considerably, although not at all to the same extent as the recovery rate, the lowest being in Ennis Asylum, 4·9, and the highest, 13·1, in Belfast. It is difficult to discover any cause for these differences. For instance, Letterkenny comes second highest as regards mortality, the rate there being 11·37 *per cent.* Now, in Ennis there is great overcrowding, the accommodation being stated to be for 380 patients, while the daily average was 533. In Letterkenny, on the other hand, the accommodation is for 757, and the daily average 689, there being thus quite a considerable amount of surplus space available. The problem would have been easier of solution had the figures in these two asylums been reversed. In the case of Letterkenny, epidemics of influenza and enteric occurred, the latter disease suggesting that there may be some defect in the sanitary arrangements. It is worthy of note that the outbreak ceased after a large number of inoculations with anti-typhoid serum had been performed.

The relative mortality from phthisis continues to fall, having been only 20·1 of the total mortality, as compared with 20·6 in the previous year. In the period 1895-1899 it reached its maximum, the ratio for that five-year period having been 29·2. Since then it has been steadily decreasing. The deaths from general paralysis (72 or 4·1 *per cent.*) were higher than in 1916, when they were only 54 (3·2 *per cent.*), the average for the preceding 5 years (1910-1914) having been 4·4 *per cent.* Variations in the mortality from this disease occur from year to year, but there does not appear to be any material increase in its incidence.

The total expenditure incurred during the year ending March 31st, 1916, both for maintenance and other charges, including repayment of loans, was £706,197 8s. 2d., showing an increase of £74,569 18s. as compared with that of 1914-1915. This is a large increment, amounting to nearly 12 *per cent.* But we live in extraordinary times, and expenditure, like most other things, is bound to be extraordinary.

With the exception of this last item, the report of the Inspectors is, on the whole, encouraging.

Alcohol: Its Action on the Human Organism. London: H.M. Stationery Office. 1918. Pp. 144. Price 2s. 6d.

The consumption of alcohol in the United Kingdom, as is well known, has slowly but steadily fallen during the present century. The year 1900 represents the crest of an upward movement and the consumption per head of the population reached in that year—alike as regards beer and spirits and wine—has been declining ever since. The recent regulated limitation of consumption has merely accelerated that decline, and the decrease during the war years 1914-1917, large as it may seem to some, only represents exactly the same numbers of gallons per head as the fall during the years 1901-1913.

The Central Control Board, which has been responsible for the regulations and arrangements under which this accelerated decline has occurred, takes a broad and enlightened view of its functions, and in 1916 appointed an Advisory Committee to consider the physiological action of alcohol and its effects on health and industrial efficiency. The members of this admirably constituted Committee were Drs. Cushny, Dale, Greenwood, McDougall, Mott, Sherrington, and Sullivan, with Lord D'Abernon as Chairman and Sir George Newman as Vice-Chairman. The Committee resolved, as a basis for further research, to prepare a review of the existing state of scientific knowledge, as distinct from surmise, conjecture, or popular belief, and to set forth this review in a serene and unimpassioned temper likely to further the progress of those problems in regard to alcohol which still call for scientific inquiry. The review is embodied in the present little volume which represents the unanimous judgment of the Committee.

The scope of the inquiry made it necessary to omit various problems which are still undecided, as well as to leave aside a number of minor points, such as the different properties of various kinds of alcoholic drinks—a matter which in practice is often found important—as not at present susceptible of scientific examination. In this way various items of possible evidential value, one way or the other, are necessarily omitted; but all the fundamental problems remain, and the evidence in regard to most of these is clear. It is not easy for anyone who has ever examined these questions impartially—to whichever side his own personal inclinations may direct him—to dispute the exact validity of the conclusions here presented in clear and untechnical language which should be intelligible to every educated reader, however ignorant of physiology and medicine. The main conclusions may be easily summarised.

There is no doubt that alcohol is a food in the same sense as sugar, though it is only available for immediate use, not being stored up, and thus may economise the use of the body reserves; but its use as a food is limited by its drug action. This drug action is entirely nervous and cerebral, but the general recognition of the nature of this action has been difficult because of the euphoria and blunting of self-criticism which alcohol produces. In all stages and on all parts of the system,

from first to last, alcohol depresses and suspends function ; it is, therefore, not a stimulant, but a sedative and narcotic drug. It is satisfactory to find this affirmation made by the Committee in the most positive and emphatic manner. It is many years since the sedative and narcotic properties of alcohol were set forth, and many people, accustomed to careful self-observation, cannot fail to have discovered empirically that this is its real effect upon themselves ; but the popular superstition that alcohol is to be regarded as a stimulant still prevails in many even influential quarters with mischievous results. Needless to add, the value of alcohol is not thus diminished, but rather increased, yet it is highly important that we should recognise precisely the conditions for its use. It is useless in enabling us to start work or to continue work of any kind, physical or mental, but it is useful in enabling us to leave off work. In the stress of the highest civilisation that use is as much demanded as in the routine of the most primitive culture—indeed, it may be argued that with the increasing strain and momentum of civilisation the brake becomes even more important than the spur. While it is, obviously, highly important to recognise this action of alcohol, it may be added that in some contingencies alcohol acts beneficially, or, at all events, harmlessly, even when applied on a totally wrong theory of its action ; moreover, even by paralysing the higher and inhibitory nervous centres it sometimes has a pseudo-stimulatory action on lower centres. On muscular action, skilled or unskilled, alcohol never has any beneficial effect ; on the contrary, it tends to impair all muscular acts. It depresses the simple reflexes ; it depresses and accelerates the heart by its action on the inhibitory nerves ; it decreases muscular work as measured by the ergograph ; it lessens athletic efforts ; it diminishes control of muscular movements ; it impairs the precision of eye movements ; it slows down the speed of voluntary movements. These results are illustrated in detail and references given to specimen investigations carried out in various countries, especially Germany. This recognition of the value of German work may doubtless, under present conditions, be counted to the Committee for righteousness ; but we miss any reference to Féré's neat and ingeniously varied experiments during many years, illustrating the results accepted by the Committee, and also showing that incidental sensorial stimulation which the Committee admits but hardly seems to lay enough stress on. On digestion, while in moderate doses there is no effect good or bad, the tendency is to retard, and this tendency is much increased in the case of special alcoholic drinks, especially such as are acid. Gastric movement is not increased, and some forms of gastric contraction are diminished, hence the carminative action of alcohol. On the respiration alcohol in moderate doses has no effect, either in health or disease ; in large doses it produces respiratory paralysis and death. On the heart, in low concentrations, alcohol has no special action ; in high concentration it is harmful ; its apparent beneficial action on persons recovering from syncope is due to its irritating action on mucous membrane, and is comparable to the effect of smelling-salts. On temperature the effect of alcohol, now generally recognised, is to cause loss of heat through flushing the surface with blood, the deep temperature falling ; so that while it is worse than useless when taken before exposure to

cold, it is beneficial after such exposure when the surface is chilled. The effects of alcohol as a drug and a poison are clearly set forth at some length ; the part of alcoholic excess in the causation of most forms of insanity is regarded as of secondary importance, rather a symptom than its cause. The Committee accept the direct and indirect evidence indicating that the chronic alcoholism of the parents reacts injuriously on the vitality and development of the offspring ; but continuity of action as well as excess of dose is necessary to constitute chronic alcoholism, and the habit-forming tendency of alcohol is relatively slight. Finally, the relation of alcohol to longevity is considered ; it is pointed out that the evidence presented by insurance companies and friendly societies as bearing on this matter is highly complicated and difficult to interpret, so that while it would appear that the death-rate is lower and the expectation of life longer in total abstainers, it is so difficult to isolate the issue from disturbing personal and racial factors that this cannot be regarded as a scientifically-established conclusion.

Most of these conclusions are simple and elementary ; but they are fundamental propositions in regard to the action of a substance which is economically and socially of the greatest importance since the inhabitants of the British Islands deem it of such value that they spend more on it than on meat and twice as much as on bread. They are, moreover, propositions that are still often ignored or denied in quarters where better knowledge might well be expected. It is, therefore, satisfactory to learn that this authoritative little volume has already attained an extremely large circulation.

HAVELOCK ELLIS.

Religion and Realities. By HENRY MAUDSLEY, M.D. John Bale, Sons & Danielsson, Ltd. Price 3s. 6d. net.

There is a pathetic interest attaching to this book. It is the last product of the author's pen. To some extent such a recollection disarms criticism, or would do so were one inclined to severity or dispraise. Again, the advanced age at which he wrote, and adverse conditions in regard to health, might have been justly adduced in mitigation of sentence for errors, solecisms, lapses of memory, or failing judgment. It is unnecessary to urge such pleas, for here, as in the case of "Organic to Human," there is the same clearness of thought and lucidity of expression. Nor is there any sign of weakening in regard to principle, no temporising, as of one who "feared hell rather than annihilation." For this we may be grateful, though, as no one would have admitted more readily than Dr. Maudsley himself, death-bed "repentances," and the utterances of those in the "dreary decline" of life, may be fairly discounted when they are at variance with principles enunciated by the same persons in their prime, or with the whole tenor of their lives.

As the title implies, this volume is chiefly concerned with the antithesis of reality as opposed to religion, or rather to the misty abstractions in which theological systems have obscured the plain facts of life and of experience. This has come about because "the persons who think—hardly one in many thousands—are rare and exceptional." It is more easy to give free play to the emotions in "rapturous exultation"

than to give time and close attention to observation and experiment. The same criticism is applicable in other spheres of thought ; people "have never taken the least pains to make themselves acquainted with what is known of physical and chemical forces, their modes of action, and their effects. They choose rather to cherish the miraculous than to observe the natural, and to pay with words instead of with valid coin." So we find that in the study of mental disorders there is, too, the same besetting sin—theory outruns experience to an extent that would be incredible had we not all been trained to believe a thing because it is impossible! On the other hand, "though it would be wrong no doubt to deny the possibility of what seems impossible, there is not the least need to manufacture fictitious possibilities and then teach them as verities." For century on century we continue along the same lines, absurdly self-satisfied with our beliefs and our theories, and unwilling even to make trial of methods which are based upon something which does not square with our pre-conceived notions. It is still fashionable to decry the materialistic conception of the universe, even though no honest attempt has been made to disprove the assertions of those who, like Dr. Maudsley, have pleaded in season and out of season for a fair trial for investigations conducted upon that basis. When they shall be proved of no avail it will be time enough for opponents to scoff.

It has been said that Dr. Maudsley was a destructive critic, and that he suggested no constructive system of philosophy. Even were this true—and it is not—it would be no slight achievement to have cleared away the accumulated rubbish which has been gathered together by years of misdirected energy. But we have, as a rule, little gratitude for him who points out the error of our ways ; we prefer him who flatters our vanity. It is unlikely, then, that anyone who disavows belief in human perfectibility, who even criticises our much-vaunted civilisation, can gain popular acceptance. Nevertheless, his words may yet prove to be nearer the truth than are the honeyed phrases with which so frequently the ears of the groundlings are tickled.

It will have been inferred from what has already been said that Dr. Maudsley had no panacea for human ills to proclaim, no easy path to the attainment of knowledge to point out, no perfervid optimism in regard to our future prospects here or hereafter. Nor can we be surprised that, looking out upon the chaos into which social conditions had passed, he inclined to pessimism. And pessimism is "alike the stern conclusion of thinking reason, and the pious confession of reverent religion." Nor is it a conclusion which is reached gladly, but one which is forced upon the thinker by the stern logic of events. "Man that is born of woman hath but a short time to live, and is full of misery. He cometh up and is cut down like a flower."

The essays collected in this volume cover a wide range of thought : "Old Age," "Death," "Life," "Truth," "Virtue," "Vanity," "Style," "Optimism and Pessimism"—the titles serve to show the diversity of subjects. But whatever the subject under discussion, the same clear light of practical reason is brought to bear upon it. There is no shirking of the issues, no faltering, even though he realised that he was soon to pass through the Valley of the Shadow of Death, when the process of Nature should "complete its particular cycle, and the individual return

to the dust from which he was created." The insistent push of vitality, derived from the sun and providing in its upward wave the basis of optimism, was dying down and giving place to old age, with its realisation of how much in life is mere vanity and vexation of spirit, illusion, and figments of faith. This, in its turn, must pass into that phase which we dread, "as children fear to go in the dark," and yet which is but a sleep, a rest longed for by the wearied flesh, a "welcome port to which, after a long and rough voyage, the weary traveller arrives at last."

It is well in these days, when the tendency is to give too free play to the emotions, and to let reason be hindered in its work, that there should be some who can look as from a tower upon the contest and dispassionately survey the scene. From the comments of such spectators we may derive, if not consolation, at least help in our distresses. Such a wise onlooker was Dr. Maudsley, and in this last book we are given the ripe reflections of his maturity. It is for others to carry on the lamp of true doctrine.

The Unmarried Mother. By PERCY GAMBLE KAMMERER. With an Introduction by WILLIAM HEALY, M.D. (Criminal Science Monographs). Boston: Little, Brown & Co. 1918. Pp. 342. Price \$3.

The most valuable part of this important work for the psychologist is that which concerns the 500 histories (not all of them here reproduced) on which it is statistically based. The great difficulty in dealing scientifically with the unmarried mother has been, indeed, precisely this lack of an adequate basis of carefully detailed data. It is true this study comes from America, but the conditions dealt with are not substantially different: the illegitimacy rate in the United States (differing widely from that of some European countries) is almost the same as that of England, and, moreover, among the 500 cases here dealt with there are nearly as many women of British as of American birth—more if we include the French Canadians.

The form the author's investigation has taken, and the careful attempt to distinguish and estimate the numerous factors involved, are largely due to the inspiration and guidance of Dr. Healy. As we might expect, environmental conditions (notably, absence from home, bad home conditions, uncongenial surroundings, recreational disadvantages, contaminating industrial conditions) are the most prominent factors, though low wages are not amongst them, and it is in flourishing and prosperous communities that the illegitimate rate is highest, in poor and backward communities that what we call "virtue" most flourishes. Heredity as a factor was not easy to estimate, partly because we cannot regard the tendency to produce an illegitimate child as a directly transmissible character, and partly because the data under this head were too scanty; its importance is recognised, but it was not possible to regard it as a major factor in a single case. Some importance is attached to abnormal physical conditions, especially those which cause weakness or irritation; this was found to be a factor in nearly 100 cases. Not only are under-development, premature birth, congenital syphilis, epilepsy, etc., thus influential,

but early and over-development may also be a factor—partly because such development tends to be associated with a developed sexual impulse, partly because it tends to outrun mental development, and partly because it is attractive to men. In one group abnormal sexual suggestibility is found to be important. But the strength of the sexual impulse is not believed to be above the average in the unmarried mother, and shows the normal degrees of variation; there was only one case of such abnormally strong sexual impulse that it was put down as nymphomania. As a rule, the girls were not passive; they were equally responsible with the fathers for their condition; the ages of the fathers, moreover, showed the probability of normal sexual attraction, and stories of rape or assault (usually remarkably similar in their details) seldom resisted investigation. A chapter of some length is devoted to mental abnormality. Reliable mental examinations were only made in some 26 *per cent.* of the cases, though Kammerer considers that some 35 *per cent.* of the 500 cases were sufficiently abnormal to have made a psychological investigation desirable; 167 girls or women were thus found to show some special mental defect or peculiarity. The mentally abnormal girl is not necessarily possessed of over-developed sex instincts, but rather of under-developed inhibitions, and it must be recognised that a lack of self-control may lead an ordinarily intelligent woman into the position of an unmarried mother. The feeble-minded morons are, however, found to form an important group, and to be very uniform in their sexual behaviour. Two or three cases were grouped under dementia præcox, and three as hysterical or psycho-neurotic, while another group was formed of cases of psychic constitutional inferiority.

Much useful information is given concerning the social and legal position of the unmarried mother in various countries and the progress made in recent years. This is most marked, both on the scientific and the administrative side in Germany, but it is in Norway that the position of the illegitimate child has now been made most favourable. Kammerer has a wide and liberal-minded chapter of "Conclusions," and lays due weight on the importance of education, not least in sexual matters (the sexual ignorance of some of these mothers was incredible); on the need also for the education of parents; on improved conditions of industrial work, better homes, and greater opportunities for wholesome recreation; on State supervision when necessary; on better individual training; and on higher moral conceptions in the community, casting aside outworn conventions, and realising that the mother "must be judged on her desire to give her child good care, and her success in doing so, rather than on the fact that she has given birth to a child outside of marriage."

HAVELOCK ELLIS.

Part III.—Epitome of Current Literature.

Clinical Neurology and Psychiatry.

Graphomania [*La Graphomanie*]. (*Revue Philosophique*, November, 1914.) *Ossip-Lourie*.

The majority of men speak with greater facility than they write ; verbal expression is considered easier than written. Between the faculty of expression by writing and the spoken word there exist important connections, but instances of word-deafness indicate that there is no complete equality or association between the two. Interior mental life is often confused when the subjective and objective impressions are too numerous to be anything but vague. During the process of writing perceptions and ideas, both conscious and unconscious, are gathered together, but the number of unconscious ideas is often superior to the conscious. We think beyond what we express. If it were possible to read the mind in writing, many things would be found there which cannot be expressed on paper. Interior thought is often only intuitive. In intuition interior thought appears infinite, immense, boundless, not circumscribed by limits. For it to become distinct it must be exteriorised by spoken and written speech.

Written language, more than spoken, limits the infinite idea, it fixes it more solidly upon the attention. It regularises the interior life, solidifies it, but more, it personifies an impression, a vision, a thought. It exteriorises the *ego*, it expresses or reflects it.

Written speech is normal when it penetrates the ego, when it expresses our affective vibration. To write normally implies a creative effort. The more profound the thought the greater the difficulty of expression. Writers whose originality is incontestable do not possess a great facility for writing. To condense, express, crystallise a thought into a definite form is often to arrest it. Particular faculties are necessary to render it with more or less justice.

Patients in asylums are often afflicted with a mania for writing, and writing in this way often has a diagnostic value, but the writer considers that outside mental hospitals a large number of individuals are afflicted with what may be described as graphomania—a psychopathic tendency to write. It is this disorder with which the paper deals.

Graphomania is a malady characterised by an excessive desire for writing. All writing which does not interpret some positive fact, which is not the result of some experience, which does not materialise an image, produce some idea, which does not reflect the interior life, the personality of the author, belongs to the category of graphomania. It is an impulse to write without any normal necessity or pretext. Such a mania may exist without desire of publication, but the term must be applied to numerous publications, executed without appreciable cause, and which astonish by their futility, strangeness, lack of purpose—literary mania. Other forms exist—letter-writing, anonymous letters, writing on walls, etc., but the writer regards this as the most serious form because it is so contagious.

A number of these individuals may be described as "Graphomania-simulators," who desire to profit from the profession of letters, and "Graphomania-parasites," who make themselves known to a celebrated writer, imitate him, deify him, exist on him as it were. Such types are more numerous than those with a definitely irresistible impulse to write.

The true literary graphomaniac, exhibits certain intellectual defects. He has false conceptions as to the value of his contributions, and as to the social influences of his writings. He abandons himself to his tendency to imitate and copy others. He imagines his writings exhibit creative activity, he thinks he himself is the source of inspiration of his productions. Two forms are observed, the excited and depressed, both often existing in the same individual. The former exhibit immense activity, their output is enormous, they belong to every literary society, they serve on every committee, they are present at every banquet. The combination of their ideas is purely superficial, the imagination is asleep, there is a kind of automatism. In the depressed form, the graphomaniac is sensitive, he attaches importance to detail, neglects his serious interests, mistakes the value of men and things, falls under the influence of the first comer. He is anxious, gloomy, discouraged, fearful, suspicious, lacking in confidence—yet always writing.

The memory for words and phrases is immense, but there is no selection or choice, no attempt to analyse, define or verify. In spite of their memory, they only possess a poor vocabulary, and they cannot find the words necessary to render their thoughts, and usually they employ others in their place. The attention is disturbed, and this explains the mobility, instability, and obscurity of their thoughts. The clearness of an idea depends on the attention paid to it.

The inner ambition of the graphomaniac is one which aims at attracting public attention. All his activities are devoted to this end. The malady may justly be included in the group of neuropathic disorders. It is a form of instability; there is a want of harmony between the thought and the act of translating it into writing. The act of writing is normal when it expresses the personality; abnormal when the ideopsychic forces do not concur in its expression.

As regards the ætiology of graphomania, the whole course of education tends to foster its growth. Copying, dictation, essays on subjects chosen by the teacher, and the writing of theses suggested by others, are all methods which inhibit personal expression in writing. Spelling and writing are automatic acts, in which the *ego* does not participate, and the content itself may readily become automatic. Publicists and journalists often hardly know what they are writing. The subject is one of indifference so long as something is produced. Many graphomaniacs at the moment the pen is in their hand are quite ignorant of what they wish to write. With facility in writing gained by practice, the act tends to become increasingly automatic.

Imitation and contagion are amongst the chief psychic causes of graphomania. The ætiology arises in the basis of society, it resides in its customs. All social life co-operates in producing the psychopathic conditions which produce in the subject the mania for writing: the commercialisation of literature, literary prizes, diminution of criticism. It increases with the advance of civilisation. The feverish activity of

some, the morbid laziness of others, unbounded desires, the discredit of manual work, the continual effervescence, increase amazingly the ranks of the graphomaniacs. H. DEVINE.

Psychoses Associated with Diabetes Mellitus. (*The Journal of Nervous and Mental Disease*, December, 1917.) Singer, H. D., and Clarke, S. N.

The writers report two cases in which there is evidence of toxic brain disturbance—restless apprehension, with sense falsification—associated with disturbances of metabolism in diabetic subjects.

In the first case the appearance of acute toxic mental symptoms was associated with a diminution of sugar in the urine. The acute mental symptoms subsided rapidly with the reappearance of sugar, so that these two manifestations appeared more or less in an inverse relation to one another.

In the second case the acute mental symptoms were noted more in association with therapeutic measures than with actual diminution of the amount of sugar excreted. With the resumption of a full diet the patient returned to his average mental state within a few days. H. DEVINE.

Part IV.—Notes and News.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was held at 11, Chandos Street, W. 1, on Tuesday, May 28th, 1918, Lieut.-Col. David G. Thomson, M.D., R.A.M.C., President, occupying the chair.

The following signed their names in the book as having been present at the meeting or as having attended meetings of committees: Sir G. H. Savage, Lieut.-Col. Sir Robert Armstrong-Jones, Drs. H. T. S. Aveline, Fletcher Beach, David Bower, J. Carswell, James Chambers, R. H. Cole, Maurice Craig, A. W. Daniel, J. Francis Dixon, E. L. Dove, T. Drapes, R. Eager, F. H. Edwards, E. L. Forward, C. F. Fothergill, A. H. Griffith, H. E. Haynes, John Keay, D. G. Lindsay, A. Miller, Richard Miller, J. M. Murray, H. J. Norman, E. S. Pasmore, J. G. Porter Phillips, Bedford Pierce, E. Prideaux, J. N. Sergeant, G. E. Shuttleworth, R. Percy Smith, J. G. Soutar, T. E. K. Stansfield, F. R. P. Taylor, C. M. Tuke, John Turner, H. Wolseley-Lewis, and R. H. Steen (Acting Hon. General Secretary).

Visitors: Drs. K. Haslam, E. M. Herford, J. D. Symon, and F. W. Thurnam.

Present at Council Meeting: Lieut.-Col. D. G. Thomson, M.D., R.A.M.C. (President), in the chair, and Drs. H. T. S. Aveline, A. Helen Boyle, James Chambers, R. H. Cole, Thos. Drapes, R. Eager, John Keay, J. N. Sergeant, T. E. Knowles Stansfield, G. E. Shuttleworth, H. Wolseley-Lewis, and R. H. Steen.

Dr. J. G. Soutar attended on the invitation of the President.

Apologies for unavoidable absence were received from: Drs. C. C. Easterbrook, R. R. Leeper, John Mills, H. de M. Alexander, Graeme Dickson, L. R. Oswald, T. S. Adair, G. N. Bartlett, Donald Ross, J. R. Gilmour, and James M. Rutherford.

The minutes of the last meeting, being printed in the April number of the Journal, were approved and signed by the President as correct.

BUSINESS ARISING FROM THE COUNCIL MEETING.

THE PRESIDENT said his first duty, under this head, was to report to the meeting that the late Dr. Maudsley had bequeathed to the Association a sum of £2000. He thought there was no need for him, on this occasion, to enlarge on the

importance and munificence of such a bequest, nor on the gratification it would afford to the members. The terms of Dr. Maudsley's Will did not specify in what way this money should be used by the Association, and the Council proposed to consider that matter at its next meeting, two months hence. He did not doubt that in the meantime the Council would be very glad to receive suggestions on the subject from any who were not members of the Council, and all such suggestions would be welcomed and receive due consideration at the meeting he had referred to.

The other business he had to report on was that Col. Keay, of Bangour Hospital, Edinburgh, had, he was pleased to know, found himself able, now that he had got his great hospital into full working order, to devote part of his time to the duties appertaining to the post of President of this Association. In consequence of that acceptance it had been arranged at to-day's Council meeting that the Annual Meeting this year be held at Edinburgh, under Col. Keay's presidency, on July 23rd and 24th, just previous to the Annual Meeting of the British Medical Association.

The following resolution would now be proposed by the General Secretary, Dr. Steen: "That, owing to the shortage of paper and the difficulty in printing, the following bye-laws, or portions of bye-laws, be suspended for the duration of the war, namely: Bye-law 26, Bye-law 67 (a), Bye-law 67 (b), Bye-law 67 (c), Bye-law 90 in so far as it requires the General Secretary to issue to each member of the Association a circular announcing the date of the Annual Meeting, etc." Members would have noted that in the paper of business of past annual meetings it had been the custom to print the names of the officers, examiners, and members of the standing committees. This had been done as a matter of convenience, not because ordered by the bye-laws. This practice it was proposed to discontinue during the war.

Dr. R. H. STEEN (Acting Hon. Secretary) moved the resolution, as printed and as read out by the President, and in doing so said he would like to draw the attention of members to Article 16 of the Association. This ran as follows: "At any general meeting of the Association, bye-laws may be made, varied, or repealed subject to the following regulation—*vis.*: Not less than fourteen days before such meeting, the Secretary shall send, through the post to each ordinary member of the Association, by prepaid letter addressed to such member at his registered address, or otherwise as provided by the bye-laws, notice of the hour and place of meeting, and notice of the resolution to be proposed at the meeting for such making, varying, or repeal of the aforesaid, provided that the omission to send any such notice shall not invalidate anything done at such meeting." Bye-law 26 provided that the Divisional Secretaries shall send a printed list of the officers and representative members of Council for election from the division. In some divisions there were 250 members, and these lists had to be printed and posted to each one, though, he feared, they were not always looked at by the members receiving them; therefore that was an item on which the Association could save printing and paper. Bye-law 67 (a) provided that each year the General Secretary should send to each member a paper showing the attendances of the members of Council at the meetings. That, he thought, might lapse during the period of the war. It was required by Bye-law 67 (b) that a voting-paper be sent containing the names of the officers to be elected at the Annual Meeting. That, he suggested, was an unnecessary expense. Bye-law 67 (c) provided for the receipt of the voting-papers, and this became void if Bye-law 67 (b) became inactive. Bye-law 90 said the Secretary should send out a notice to each member giving the date of the Annual Meeting, and at the same time make a request for the contribution of papers and other scientific matter therefor. As a number of members were now absent from England, the printing of this, and especially the postage, would be a very heavy item, and he did not think it was, during war time, worth the expenditure. Those were the reasons for which he moved the resolution.

Dr. BOWER seconded.

The PRESIDENT, in asking members to vote upon it, said it would be clear it was a war measure, and would economise in paper, time, and postages.

Dr. PERCY SMITH asked how it was proposed to give adequate notice to members concerning the Annual Meeting. Would it not be the simplest and least expensive method to send a post-card with this information on it? That was especially necessary as, this year, instead of holding the Annual Meeting in London, it was pro-

posed to hold it in Edinburgh. Publishing it in the Journal would not suffice, especially as it would not appear until July.

The SECRETARY (Dr. Steen) replied that he hoped that members would receive good notice by having the agenda paper of the Annual Meeting posted to them three weeks before the date of the Annual Meeting, giving place and all particulars. If it was thought wise to send post-cards on this occasion, he would remind the meeting that from June 1st the rate for post-cards would be 1d.

Dr. PERCY SMITH expressed himself as quite satisfied.

The resolution was agreed to.

ELECTION OF CANDIDATES FOR MEMBERSHIP.

The PRESIDENT nominated as scrutineers for the ballot Major Eager and Capt. Norman. The following gentlemen were duly elected:

ANDERSON, WILLIAM KIRKPATRICK, M.B., Ch.B.Glas., Visiting Physician Eastern District Hospital, Glasgow, 3, Ashton Terrace, Glasgow.

Proposed by Drs. Neil T. Kerr, R. B. Campbell, and G. Dunlop Robertson.

ARCHIBALD, ALEXANDER JOHN, M.B., Ch.B.Glas., Acting Medical Superintendent, Argyll and Bute District Asylum, Lochgilphead, Argyllshire.

Proposed by Drs. Neil T. Kerr, R. B. Campbell, and G. Dunlop Robertson.

EVANS, TUDOR BENSON, M.B., Ch.B.Liverp., Capt. R.A.M.C. (Temp.), Lord Derby War Hospital, Warrington. (Home) The Pharmacy, Denbigh.

Proposed by Major R. Eager, Capt. O. P. Napier Pearn, and Dr. T. Stewart Adair.

OGILVIE, WILLIAM MITCHELL, M.B., C.M.Aberd., Medical Superintendent, Ipswich Mental Hospital, Ipswich.

Proposed by Drs. J. R. Whitwell, E. S. Pasmore, and H. M. Berncastle.

THIENPONT, RUDOLPH, M.D., Temporary Assistant Medical Officer, Cane Hill Mental Hospital, Coulsdon, Surrey.

Proposed by Drs. Fletcher Beach, Edward Gane, and R. H. Steen.

PAPER.

JOHN TURNER, M.B., C.M.: "Observations on the Rolandic Area in a Series of Cases of Insanity." (This paper, or an abridgement, with discussion, will, it is hoped, appear in a future number of the JOURNAL.)

The PRESIDENT said Dr. Fothergill had agreed it was now late in the afternoon to take his paper on "The Prevention and Treatment of Neurasthenia and other Functional Nervous Breakdowns," though it was a subject of great importance in these times. The author had agreed to defer it to an early meeting; probably it would form a good subject for discussion at the Annual Meeting in July if that could be arranged.

SCOTTISH DIVISION.

A MEETING of the Scottish Division of the Medico-Psychological Association was held in the Hall of the Royal Faculty of Physicians and Surgeons, Glasgow, on Friday, March 15th, 1918.

Present.—Lieut.-Col. Keay, Major Hotchkis, Capt. Roberts, Capt. Buchanan, R.A.M.C., Drs. Crockett, Carlyle Johnstone, Kerr, T. C. Mackenzie, Macdonald, Oswald, G. M. Robertson, Jane Robertson, Watson, Yellowlees, and R. B. Campbell, Divisional Secretary.

On the motion of Lieut.-Col. Keay, Dr. Oswald was called to the Chair.

Before taking up the ordinary business of the Meeting, the Chairman referred in appropriate terms to the loss which the Association and the asylum service had sustained since last meeting through the death of Dr. W. R. Watson, for several years Medical Superintendent of Govan District Asylum at Hawkhead. It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Medico-Psychological Association desire to express their deep sense of the loss sustained by the death of Dr. W. R. Watson, and their sympathy with his relatives in their bereavement, and the Secretary was instructed to transmit an excerpt of the minute to the relatives.

The minutes of the last Divisional Meeting were read and approved and the Chairman was authorised to sign them.

Apologies for absence were intimated from Lieut.-Col. Thomson, President of the Association, Drs. Easterbrook, Skeen, Tuach-Mackenzie, Alexander, Ross, Orr, Crichlow, Porter Phillips, and Mills.

The Secretary submitted letters of acknowledgment received from the relatives of Dr. Urquhart and Dr. Hayes Newington, thanking the members of the Division for the kind letters of sympathy.

Drs. L. R. Oswald and J. H. Skeen were unanimously elected Representative Members of Council for the ensuing year, and Dr. R. B. Campbell was elected Divisional Secretary.

Dr. L. R. Oswald was recommended to the Educational Committee of the Council as an Examiner for the Certificate in Psychological Medicine, and Dr. N. T. Kerr was recommended as Examiner for the Final Nursing Examination.

Dr. Isobel Emslie's paper, "Notes on Mental Treatment in Macedonia," was in her absence read by Dr. G. M. Robertson. Her sketch of the primitive methods in use was most interesting, and her efforts to improve the condition and treatment of the insane by means of her appeal to the authorities were most commendable. The members of the Division asked Dr. G. M. Robertson to convey to Dr. Emslie their thanks for her paper, which was so much appreciated. A copy of the paper will appear in the Journal.

The Secretary submitted a letter which he had received from the Secretary of the Parliamentary Committee stating that a Sub-Committee had been appointed to consider reforms in the English Lunacy Laws, in view of the many problems which would result after the War. After some discussion it was unanimously resolved that the members of the Division at present members of the Parliamentary Committee might be formed into a Sub-Committee having power to add to their number to consider the whole question, and make any recommendations they should consider advisable to the Parliamentary Committee of the Association, and also report to the Division.

A vote of thanks to the Chairman for presiding concluded the business of the meeting.

SOUTH-WESTERN DIVISION.

SPRING MEETING, 1918.

THE SPRING MEETING of the above Division was held by the kind permission of Dr. MacBryan at 17, Belmont, Bath, on Friday, April 26th, 1918, at 2.30 p.m.

The following members were present:—Drs. Mary Martin, MacBryan, Nelis, Rutherford, and Dr. Aveline, who acted as Hon. Div. Secretary in the unavoidable absence of Dr. Bartlett.

Dr. Nelis was voted to the Chair.

Letters of regret for non-attendance from Lieut.-Col. D. G. Thompson (the President), Maj. Eager, Drs. Bartlett, Macdonald, and Starkey were read.

The minutes of the last meeting were read and confirmed.

Dr. Bartlett was appointed Hon. Div. Secretary.

Drs. MacBryan and Aveline were elected as representative members of Council.

Drs. Mary Martin and Macdonald were elected as members of the Committee of Management.

The date of the Autumn Meeting was fixed for Friday, October 25th, 1918, and that of the Spring Meeting for Friday, April 25th, 1919.

The place of the Spring Meeting was left in the hands of the Secretary for arrangement.

A letter from Miss Hayes Newington, thanking the members for their kind expression of sympathy on the death of her father, was read.

A communication was received from the General Secretary announcing an alteration of the date of the next Quarterly Meeting from May 21st to May 28th.

NORTHERN AND MIDLAND DIVISION.

THE OCTOBER MEETING of the Division will be held at the Maghull Red Cross Hospital, near Liverpool.

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IRISH DIVISION.

THE SUMMER MEETING of the Irish Division of the Medico-Psychological Association of Great Britain and Ireland was held, by the kind invitation of Dr. M. J. Nolan, at Downpatrick, on Thursday, July 4th.

Members present: Dr. J. Colles, Dr. Considine, Lieut.-Col. Dawson, Dr. Drapes, Dr. J. O'C. Donelan, Dr. Nolan, Dr. Hetherington, Dr. Smyth, Dr. Graham, Dr. Greene, Dr. Gavin, Dr. O'Mara, Dr. Grimbly, Dr. Cotter, and Dr. Leeper (Hon. Secretary).

Dr. Nolan having been moved to the Chair, the minutes of the previous meeting were read and signed.

Letters of apology for unavoidable absence were read from the following: Dr. Rainsford, Stewart Asylum; Dr. Mills, Ballinasloe; Dr. McKenna, Carlow; Dr. Lawless, Armagh; Dr. H. Eustace, Dr. Redington, Portrane; Dr. Irwin, Limerick; Dr. Revington, Dundrum; Dr. Fitzgerald, Waterford; and Dr. Martin, Letterkenny.

The CHAIRMAN asked, before the regular business of the meeting was proceeded with, to draw the attention of the members to the loss which the Association and the whole faculty of Psychological Medicine has sustained by the death of Dr. Maudsley. The following resolution was proposed by Dr. Drapes, seconded by Dr. J. O'C. Donelan, and passed in silence, the members standing in their places:

"We, the members of the Irish Division of the Medico-Psychological Association of Great Britain and Ireland, desire to place on record our deep sense of the loss Psychological Medicine has sustained by the death of Dr. Henry Maudsley, and of our appreciation of his munificent endowment of the London Mental Hospital."

A letter was read from the Inspectors of Asylums, Dublin Castle, acknowledging the receipt of the resolution passed at the Spring Meeting *re* recent conduct of attendants in Irish asylums.

The following candidates having been duly balloted for were declared elected:

The Right Hon. MICHAEL COX, M.D., R.U.I., Hon. Causa., F.R.C.P.I., Physician, St. Vincent's Hospital, Dublin; Lord Chancellor's Consulting Visitor in Lunacy for County and City of Dublin.

Dr. SAMUEL JOHN GRAHAM, Resident Medical Superintendent, Villa Colony Asylum, Purdysburn, Belfast.

The CHAIRMAN proceeded to introduce a discussion on the proposed alteration of the Lunacy Laws, in accordance with the work now under the consideration of the Parliamentary Committee of the Association. He stated that this matter had received much attention from the Irish Division and that so long ago as March 26th, 1907, at the Spring Meeting of the Division, the whole question of Lunacy legislation in Ireland engaged the attention of the members, and all he considered that could be done by those now assembled was to reconsider the recommendations then made and to obtain the general sense of the meeting as regards the proposals for new Lunacy legislation now before the Parliamentary Committee. The Hon. Secretary read a letter from Dr. Cole, Hon. Sec., Parliamentary Committee, stating that three recommendations were now being made by the Lunacy Legislation Committee and that he hoped to report further progress. The three recommendations were as follows:

(1) The establishment of Clinics (for the treatment of early cases of mental disorders by local authorities).

(2) The approval of Homes for borderland Mental cases received for payment.

(3) The extension of Voluntary Boarders to the County and Borough Asylums.

The Hon. Secretary read a reply to the letter which he had sent to Dr. Cole.

The Chairman and the members discussed these three proposals, and the sense of the meeting was obtained from each member present, Dr. Colles, Dr. Considine, and Lieut.-Col. Dawson giving the meeting valuable information as regards the legal points raised.

The opinions of the members were generally as follows:

Firstly, as regards the establishment of Clinics for the treatment of early cases : That these were undesirable, except as hospitals attached or adjacent to existing asylums where patients could be received without certification.

Secondly, the meeting was unanimously opposed to the proposal for setting up approved Homes for borderland cases for paying patients.

Thirdly, as regards the question of the admission of Voluntary Boarders to County and Borough Asylums, the Irish Division approved of such procedure, and desired that a similar facility be extended to Ireland as existed in England and Scotland for the admission of voluntary patients.

It was proposed by Dr. W. Smyth, seconded by Dr. Graham, and passed unanimously :

"That the following committee be elected as a sub-committee of the Parliamentary Committee of the Association to co-operate in securing alterations in the Lunacy Laws as affecting Ireland : Dr. Gavan, Dr. J. O'C. Donelan, Dr. Nolan, Dr. Eustace, Dr. Drapes, Dr. Rainsford ; Dr. Leeper to act as Hon. Secretary."

The CHAIRMAN proceeded to draw the members' attention to the recommendations approved at the meeting of the Irish Division held on March 26th, 1907, when the Irish Councils' Bill was before the House of Commons.

The first matter dealt with in the memorandum then drawn up was as follows : "In order to check retrograde or otherwise undesirable movements, there should be a strong Commission at the head of the Lunacy Administration of the country, possessed of ample powers, which should not be merged into any other Government department."

The meeting strongly expressed the opinion that it would be most desirable to increase and strengthen the powers of the Inspectors of the Irish Asylums, and a policy of obtaining powers for the Irish Government Lunacy Officials, similar to those in the hands of the English Lunacy Commissioners, was endorsed by the meeting. Dr. COLLES kindly explained the legal aspects of the case, and Lieut.-Col. DAWSON, Dr. CONSIDINE, and Dr. J. O'C. DONELAN expressed their views on the matter, which were of valuable help to the members in forming their opinion on the subjects. Dr. J. O'C. DONELAN spoke as regards the danger of the Irish asylums being merged under the authority of the Local Government Board, a procedure which, if it ever occurred, would be disastrous to Irish asylums, and prejudicial to the interests of the insane poor.

The question of the amendment in the modes of admission of patients to asylums was next reconsidered. The necessity for such amendment was unanimously felt, and Dr. GAVIN spoke in favour of the "Dangerous Lunacy Act" being repealed, and, after much discussion, in which almost all present joined, and cases of gravity having been mentioned, where great hardships were inflicted upon patients and murder had resulted from failure to have patients promptly sent to asylums owing to the present obsolete and cumbrous procedure, the meeting almost unanimously recommend :

(1) "That the law as regards the admission of patients to district asylums be assimilated to that in England and Scotland.

(2) "That, so far as possible, lunacy should be dissociated from criminality, and that the insane poor should not be treated as criminals in order to receive treatment for their mental disease. That the so-called 'House Form' — 'Form D' — be universally used, and that it be obligatory upon asylum governors to admit patients on the so-called 'House Form.' Certification should be uniform, and either one medical certificate, or two, if thought necessary, should be accepted, altering the present anomalous procedure where a patient requires only one certificate on one form and two on another."

The question of bail, in the case of patients being removed from asylums, was discussed, and the present law as regards recognizances in the case of patients was considered unsatisfactory, as they seemed never to be or to have been enforced.

Dr. COLLES kindly expressed the opinion that the existing English Lunacy Act is an admirable procedure, and covers all the disabilities from which the procedure in this country suffers.

The question of the conveying of patients to district asylums was next considered, and the opinion expressed that policemen should not be in charge of

female patients so sent, although it was understood that this duty was now always assigned to a married sergeant of the R.I.C. Nurses should be employed in this service and not the police.

Dr. COLLES drew the attention of the meeting to the present mode of granting and renewing licences to private asylums, which procedure was similar in Ireland to that of granting ordinary publicans' licences, and suggested that these licences should be granted by the Lord Chancellor on the recommendations of the inspectors of Irish asylums.

The CHAIRMAN spoke as to the advisability of deleting the word "destitute" from Form "D," which was thought desirable, as this was obviously an error in a form for a paying patient.

Dr. HETHERINGTON, as the oldest member present, proposed a cordial vote of thanks to Dr. and Mrs. Nolan for their kindness and hospitality in entertaining the members. Dr. J. O'C. DONELAN, in seconding the resolution, wished to express to Dr. Nolan the congratulations of the visitors upon the wonderful improvements in the asylum since his last visit in 1907, and to state the great appreciation by all those who visited the asylum of its high standard of efficiency and the admirable condition to which it had been brought by Dr. Nolan. This resolution having been passed by acclamation, and Dr. NOLAN having replied, the meeting ended.

SOUTH-EASTERN DIVISION.

THE SPRING MEETING of the South-Eastern Division of the Medico-Psychological Association was held at 11, Chandos Street, Cavendish Square, London, W. 1, at 2.30, p.m., on Wednesday, May 1st, 1918.

The following members were present: Drs. D. Bower, A. W. Daniel, E. L. Dunn, F. H. Edwards, L. O. Fuller, A. H. Griffith, G. H. Johnston, H. J. Norman, E. S. Pasmore, R. P. Smith, and J. N. Sergeant (Hon. Divisional Secretary).

Dr. R. P. Smith took the Chair.

The minutes of the last meeting, having been printed in the Journal, were taken as read and confirmed.

Dr. J. N. Sergeant was elected Hon. Divisional Secretary, and Major Sir R. Armstrong-Jones and Drs. D. Bower, M. Craig, and A. W. Daniel Representative Members of the Council for the year 1918-1919.

Drs. Daniel and Fuller were elected to fill vacancies on the Committee of Management.

Dr. Walter Folliott Blandford was elected an Ordinary Member of the Association.

It was decided to leave the place and date of the Autumn Meeting, 1918, to the discretion of the Hon. Divisional Secretary.

It was proposed by Dr. Sergeant, seconded by Dr. Edwards, and carried, "That the meeting requests the Council of the Association to consider the advisability of asking the Board of Control to act by giving badges or otherwise to help the superintendents of institutions to retain their staff."

Capt. Hubert J. Norman, R.A.M.C., then read his paper, "Evolutionary Progress in Psychiatry: A Plea for Optimism." (This paper appeared in the April number of the Journal.)

A short discussion of the paper followed, in which Drs. Percy Smith, E. S. Pasmore, J. Noel Sergeant, Francis H. Edwards, and A. Hume Griffith took part. Capt. Norman replied, and so brought to a conclusion an enjoyable and instructive meeting.

ASYLUM WORKERS' ASSOCIATION.

MEETING AT THE MANSION HOUSE.

(Abridged Report.)

THE ANNUAL MEETING of the Asylum Workers' Association was held at the Mansion House, London, on May 29th, the Lord Mayor (Alderman Charles A. Hanson, M.P.), in the chair. This was the second occasion on which the Association had been fortunate enough to foregather in the famous building, the first

being last year, when Sir William Dunn sat in the seat of Whittington. The present occasion, like its predecessor, was distinguished by excellent speeches and a large attendance.

The LORD MAYOR said that many eminent gentlemen who were expected to take part in the proceedings were present, and therefore he would not occupy more than a minute of the meeting's time, but he wished to express the very great pleasure with which he welcomed the Asylum Workers' Association to the Mansion House. They had been doing most excellent work, and he hoped that in spite of all the serious disadvantages which must impede their progress in times like these, they would continue to carry on in the same spirit and with the same energy and courage as in the past. He learned from a perusal of the report that their operations had been most helpful to suffering humanity.

Dr. G. E. SHUTTLEWORTH (Acting Hon. Secretary), presented the annual report, which was taken as read.

PRESIDENT'S ADDRESS.

Sir JOHN JARDINE, M.P., President of the Association, moved the adoption of the report, and remarked that the large gathering before him was particularly gratifying because it included many persons who had come there prompted by a sense of duty. He referred to both ladies and gentlemen. Though he did not profess to be witty, he thought it right on the present occasion to recognise that brevity was the soul of—what should he say—business. In the first place he wanted to express the pleasure which the Association felt at meeting in this historic building. Last year Sir William Dunn opened its hospitable doors to, and bestowed the patronage of his name and position as Lord Mayor on the Society. They owed much to the present Lord Mayor for a renewal of the advantages conferred by meeting in the Mansion House with the Chief Magistrate of the City of London in the chair. They might hope that many things which would probably have been very rough would be made smooth to them when the Lord Mayor used his great office and all the influences for good combined in it to favour a little society which was trying to do its duty towards the afflicted. On behalf of the Association he (the President) thanked the Lord Mayor very much for giving up his time to assist them, and for enabling them to meet in the heart of the City, with all the traditions of London's mayoralty and the many activities of a great and famous centre of human affairs around them. Glancing through the annual report, the President said that the objects of the Society were very well put by Cardinal Bourne when he said that they were "(1) to create and maintain a very high standard of duty among our members, and (2) to safeguard the claims of those devoting themselves to the care of the mentally afflicted to liberal and considerate treatment on the part of the authorities." Everybody was unsettled by the terrific and long-continued war, and it was interesting to know that more than 50 *per cent.* of the male attendants in asylums had been pressed into the conflict, and a great many of the women workers in asylums had gone into other phases of national service. Some, alas! they had lost. Dr. L. F. Hanbury, of West Ham Asylum, had died on active service, like many gallant colleagues at the Front. They had also to mourn the departure from this life of Dr. W. J. Seward, formerly Medical Superintendent of Colney Hatch Asylum. Mr. Wm. Hope, Inspector, the Association's first Hon. Secretary at Colney Hatch and one of their earliest gold medallists, died last September. From the list of Vice-Presidents death had removed the honoured names of Dr. Hayes Newington, Dr. Percy Baily, and Dr. C. T. Ewart. It was right that they should be mentioned with honour. The inclusion in the Association of workers in institutions for the mentally defective was one of the most important matters mentioned in the report. It affected a large number of people and opened a very important new sphere of influence for the Society. Thinking of the war prompted him to repeat some words used by Sir James Crichton-Browne, who said that when he was a young man he went to Germany to perfect his knowledge of medical methods and science, but his opinion now was that there was no need for people from the British Isles to visit Germany in order to get knowledge about lunatic asylums and the proper treatment of their inmates. Our system was better in every respect. Humanity

particularly was far more noticeable in the British than in the German treatment of lunacy. That was Sir James Crichton-Browne's view, and our experience of German warfare confirmed it. One of the objects of the Association was to promote the just claims of asylum workers, and the report showed that the point was attended to as much as possible, although the pressure of Government business and war work prevented private members like himself from introducing Bills into Parliament. Asylum workers had, however, got something from the Government in the meantime. And though the Act obtained by Sir William Collins raised the status of those workers, they intended to obtain, if possible, some further concessions, which were very much needed. The war had made large claims on the men and women employed in asylums and had made it harder to do the work as it ought to be done. It had, however, been well done, and he thought the presence of so many ladies and gentlemen at this meeting was a sign that the Association was regarded as having deserved well, and as being likely to continue in the same career. In this connection it was right to make special mention of their Acting Hon. Secretary, Dr. Shuttleworth, who in this time of stress, as always, had set a high example of self-sacrifice in order to help the Association, throwing himself into the breach and working for the Society as well and even better than anybody else could have done.

The DEAN OF WINDSOR (the very Rev. A. B. Baillie) seconded the motion, remarking that the only justification he could claim for addressing the meeting was that for thirty years he had been very closely associated with hospital work and the staffs of many different hospitals. He would not try to present great ideals as Cardinal Bourne did when addressing the Association in this same building last year, but he would say a word or two that might be of practical value to members of the Association. The great weakness of the generation now passing away was that it did not lay sufficient stress on the importance of personality. In all kinds of life we were apt to think of the workers more or less as machines, going on almost automatically. The war, however, was bringing us back to a sense of two things—first, that individual personality must be treated separately. If men or women were to do good work it must be along the lines of their own personality. In the second place, the war was bringing us to remember that however good methods might be their value would entirely depend on the quality of the people who used them. The merit of the Asylum Worker's Association lay in the recognition of this essential truth. If we were to promote the welfare of the people for whom asylums were built, our first care must be for the personalities of those who were to look after them. That also was the best thing that we could do for the workers themselves. The happiness of life as well as its efficiency depended on the development of personality. The great weakness of modern industrialism was that the conditions made it difficult for the ordinary worker to develop his personality. So much of the work was mechanical that it did not create interest, but it did tire, and when people were tired they could not make proper use of their leisure. How could we help asylum workers to keep alive the glory and dignity of their occupation and so to sustain and develop their own personality? It was necessary to elevate their self-respect in relation to their work. When people lived almost entirely with their fellow-workers, as in hospitals, and criticised each other freely, as all fellow-workers did when constantly in touch with the little details of the daily occupation, it was easy to forget its nobleness. Somebody was needed to give reminders that those details were merely incidental to a great purpose, and that in their adequate fulfilment there was something noble. The encouragement that the Association gave to asylum workers in various ways was good for that purpose. But that was not all. The more they could get indirect recognition of the dignity of the work done by attendants and nurses, the better it would be for those persons and the work itself. Recognition that was not formal was far better for the raising of self-respect than official recognition. The more people could be got socially to accept such workers as members of a dignified profession, the more those workers would be helped to self-respect in connection with their work. There was a second point which was often forgotten; most nurses and attendants entered their profession when they were young, and there was an absolute necessity for enjoyment in youth. What members of hospital staffs really suffered from at times was staleness—not dullness, which was different, but working without

the relief of the complete change which came from entirely forgetting one's work for a time. He had a great struggle on this subject in a hospital at Coventry one Christmas. He felt that the nurses were getting stale, and he wanted them to have something that would refresh their minds. He spoke to the managers on the subject, but they said "No; in war-time it would not be right." They pointed out that there were entertainments for the patients, but he replied that they did not sufficiently take the nurses out of themselves. Finally, he asked whether he would be allowed to give the nurses a dance, and the managers agreed, but would not do it themselves. He took a great deal of trouble to collect double as many dancing men as there were dancing nurses. He got the best music he could, and he saw that every single nurse had every single dance there was. The entertainment had the most valuable effect in sending the workers of that hospital back to their occupations with renewed freshness, because they had something new to remember and talk about. Nurses could not go on without something to keep up the freshness of their appreciation of what the patients needed. When one was ill, how awful it was to be nursed by a dull, stale person. It was the most crushing thing in the world. He remembered an experience after he had been smashed in a bad accident. He had a friend who came regularly to see him and made him worse every time. He liked this friend when he was well, but not when he was ill. He would lean over the end of the bed and get on his (the Dean's) nerves to such an extent that he almost made him scream. There were nurses like that. We want them different—fresh, full of interest and capacity to appreciate, because then they really helped the patients. If this was true of ordinary hospitals it must, with still stronger reason, be true of asylums. So many hours off duty did not completely relieve mental strain. Some new train of thought was necessary, because if nurses were to do their work well they must be enabled to avoid staleness, besides bearing in mind the noble idea of helping their fellow-creatures.

Dr. CHARLES MERCIER, supporting the motion, said it was peculiarly appropriate that he should be called upon to do so in the historic Mansion House of the City of London, for there was only one thing with which he had been associated longer than with asylum work, and that was the City of London. As a boy he went to the Merchant Taylors' School, then in Suffolk Lane, Cannon Street. The chief means of education there was the cane. The boys were caned all day. They were caned for anything and for nothing. He had held out his hand and received six severe strokes which paralysed his fingers. Then he had been sent to write a copy, and because he wrote badly he was caned again.

After commenting on some of the more disagreeable aspects of asylum life, and the difficulties of those in attendance on insane patients, Dr. Mercier continued:

It used to be thought, most mistakenly, that force was the remedy for madness. A hundred years ago George III was so affected by the death of his favourite daughter Amelia that he lost his wits for a time, and was placed under the care of two nurses. They were called keepers in those days. Thirty years ago he knew an old gentleman who had been born in the reign of George III, and was personally acquainted with one of the men who had been his keepers. In a conversation on the subject of the unfortunate king the old gentleman said, "I asked the keeper what they did when the king became violent, and the reply was, 'We knocked him down as flat as a flounder.'" If the meanest subject of our present Sovereign were treated in that way the nurse guilty of the offence would be brought before a court and sentenced to a long term of imprisonment; he would lose his employment, forfeit his pension, and be a ruined man, and would richly deserve the punishment. Fancy the difference between the nursing of mad people in the days of George III and the nursing of them now. It was immense, and nobody would wish to reverse the change. At the outbreak of the present war there were some 5,300 male nurses in the asylums of this country. More than half of them had since joined the Army, and yet the efficiency of asylum administration had not been impaired. In the asylums of England and Wales there were about 130,000 lunatics, nearly all of whom were potential suicides. Many were actively suicidal, and some, though not intentionally so, were ready to commit suicide if the chance presented itself. How many of the whole body committed suicide in the year 1916? Only four of the 130,000, and that was actually a smaller number than had committed suicide before the war. In these circumstances he could not too strongly commend the objects of the Asylum Workers' Association.

Major the Rev. S. LIPSON, S.C.F., as a member of the Jewish faith, thought it a great honour to be associated in commending the report of the Association. At the call of the Motherland many sacrifices had been made, but none could be greater than that made by people who devoted every minute of their lives to the care of those who were mentally suffering. He ventured to suggest that the Asylum Workers' Association should abandon that name, and should in future call itself the Mental Hospital Workers' Association. He liked the action of the London County Council in using the phrase "mental hospital," seeing that the word "asylum" had suffered depreciation. Paying a tribute to the late Dr. Seward, Medical Superintendent at Colney Hatch, as one with whom he had been connected for many years, and one of the noblest men he had known, the speaker rejoiced that Dr. Seward's fine example was followed by the present Medical Superintendent, a fact which gave him the greater pleasure as persons of the Jewish faith were to some extent congregated at Colney Hatch. In conclusion, Major Lipson said that in the Great Beyond nobody would be more assured of a place at the right hand of the Heavenly Father than the men and women who had devoted themselves to the needs of those whose spirits were darkened.

The annual report was unanimously approved.

THE PRESIDENT RE-ELECTED.

The Lord Mayor having left the chair in order to keep another engagement, his place was taken by Sir John Jardine.

Sir FREDERICK NEEDHAM, M.D. (Board of Control), moved the re-election of Sir John Jardine, M.P., as President of the Association. They were, he said, extremely fortunate to have a man of such distinction at their head.

Sir GEORGE SAVAGE, M.D., seconding the motion, remarked that Sir John Jardine had not only been a ruler in India, but was now one of our rulers in England, and had the British spirit of always wanting to work. He had been a most excellent President in the past, and was sure to be the same in the future.

Capt. H. KIRKLAND-WHITTAKER, R.A.M.C., supported the motion, and at the same time called attention to the training of asylum nurses. The authorities of those institutions, he complained, had to look outside in order to get women to become matrons and assistant matrons. The present system was not fair to the nurses who worked for years, and then found the door to higher positions slammed in their faces. No doubt the candidates for the higher positions should have had hospital training, but the authorities of asylums should make it possible for their nurses to acquire the training necessary to fit them for such posts. For that purpose there ought to be co-operation between general and mental hospitals.

The motion was carried with acclamation.

The PRESIDENT, thanking the meeting for his reappointment, said that when a motion like the one just carried was brought forward there ought to be some person present such as the one that appeared in the Roman Curia—an Advocatus Diaboli, who would show cause against the proposal. In spite of the kind things said of him, he feared that Sir John Jardine, as President of the Association, was no better than he should be. He had tried to do his best, but as far as legislation was concerned had been hampered by Parliamentary want of touch with the work of mental hospitals.

Lieut.-Col. D. THOMSON, M.D. (President of the Medico-Psychological Association), moved the re-election of the Vice-Presidents, Central Executive Committee, and officers of the Association, with the addition of the Lord Mayor and Sir George Wyatt Truscott, Bart., to the Vice-Presidents, and of Dr. J. Noel Sergeant, Miss E. A. Macdonald, and Mr. J. E. Stephens to the Committee. There was, he said, a great and unfortunate divergence between the hospital-trained nurse and the asylum-trained nurse. This was very much to be deplored, as Capt. Kirkland-Whittaker pointed out while hinting at co-operation in the training of nurses between the two classes of hospitals. In the last three years he (Dr. Thomson) had been associated not only with the asylum-trained nurses but also with a much more numerous body of hospital-trained nurses who were under his command. Comparisons were odious, and he would not make them with reference to individuals, but the more he saw of nurses trained in general hospitals the more he thought of those trained in asylums. Male attendants he could not speak of,

but he found in the asylum-trained nurse more capacity for mothering attention than in the nurses who had been generally trained.

Inspector R. KEEN (Colney Hatch), seconded the motion, and urged the Executive Committee to consider the suggestion that the name of their organisation should be changed to "Mental Hospital Workers' Association."

The motion was unanimously agreed to.

The President then presented medals to a number of attendants on account of long and faithful service.

The Rev. JOHN PECK (Holloway Sanatorium), moving a vote of thanks to the Lord Mayor, the President, and the speakers, protested against the idea of the insane being unlovable. They were very precious in the sight of God and those who worked for them. It was true that if one looked at the surface only he found much that was unpleasant, but below the surface there was something precious. These afflicted people were engaged in a contest which was our problem as well as theirs. They were the centre of something sacred. That was why so many workers were attracted to them. Some of the finest people had at times displayed bad qualities. St. Peter in the presence of his Lord cursed and swore, but that did not prove that he was unlovable, and still more allowance must be made for the afflicted people with whom the members of the Association were concerned.

Dr. HELEN BOYLE (Brighton), seconded the motion, remarking that two things had particularly appealed to her in the speeches that afternoon. One was the dance arranged for nurses by the Dean of Windsor, and the other was Dr. Mercier's reference to the afflicted people and the nurses. Dr. Mercier's object was to point out how difficult the work in asylums often was, but there was help in the sense of humour, and some of the best laughs she had ever indulged in had been due to the humour of mental patients. Some of those patients had a jollier and happier time than sane people because they had lost the habit of self-criticism.

The vote was cordially agreed to, and the meeting came to an end.

NOTICE TO CONTRIBUTORS.

N.B.—The Editors will be glad to receive contributions of interest, clinical records, etc., from any members who can find time to write (whether these have been read at meetings or not) for publication in the Journal. They will also feel obliged if contributors will send in their papers at as early a date in each quarter as possible.

Writers are requested kindly to bear in mind that, according to LIX(a) of the Articles of Association, "all papers read at the Annual, General, or Divisional Meetings of the Association shall be the property of the Association, unless the author shall have previously obtained the written consent of the Editors to the contrary."

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The Presidential Address on the War and the Burden of Insanity,
delivered at the Seventy-seventh Annual Meeting of the Medico-
Psychological Association, held at Edinburgh on July 23rd and
24th, 1918. By JOHN KEAY, M.D., F.R.C.P.E., Lieut.-Col.
R.A.M.C.

LADIES AND GENTLEMEN,—Through your kindness and goodwill,
and not on account of any merit or distinction of mine, you have placed
me in the honourable position I occupy to-day. I gratefully acknow-
ledge the high honour conferred upon me, and, deeply conscious of my
personal limitations, I shall endeavour to the best of my ability to
justify your confidence.

Four years ago we met in the ancient city of Norwich, and dwelt for
a few days in the shadow of its magnificent cathedral—the quiet peace-
fulness and the old-world atmosphere of the place made for mental
repose, and pleasant memories of its charming and hospitable people,
its fragrant gardens, and its lazy waters will linger with us for many
a day.

Not one of us, I make bold to say, at that happy meeting had any
idea that the war cloud then just visible on the south-eastern horizon
would presently envelop us, and that within a fortnight we as a nation
should be in deadly grips with a powerful and unscrupulous enemy in
the most stupendous conflict the world has ever seen.

Since our meeting at Norwich five distinguished occupants of this
chair—Clouston, Urquhart, Hayes Newington, Mickle, and Maudsley—
and a President-elect, the genial, great-hearted Turnbull, have solved
the great mystery, and passed from among us. I firmly believe that in
holding our annual meeting here in Edinburgh at the end of the fourth
year of the great world-war we are “carrying on” as those doughty
champions and true-hearted patriots would wish us to do, and that they
are with us in spirit to-day.

LXIV.

23

The war has exacted a heavy toll of members of the Association and of their sons, and many of the best and bravest men of the staffs of our asylums have died glorious deaths in the cause of liberty and justice. None of us would have had it otherwise. We honour the gallant dead. We treasure the memory of their valour and self-sacrifice. Let us see to it that we carry on their unfinished work, so that they may not have died in vain.

It is reported of a respected Edinburgh divine that he earned the gratitude and admiration of his flock by preaching a sermon in which he never once referred to the great war. Such extraordinary restraint is altogether beyond me; and this at least may be said in excuse—the minister well knew that he would return with greater zest to the all-engrossing subject on the following Sunday, whereas with me it is a case of now or never. You will certainly see to it that my first opportunity shall also be my last.

Three and a half years ago Prof. J. Arthur Thomson, in the Second Galton Lecture on "Eugenics and War," pointed out that, biologically regarded, war meant wastage and a reversal of natural selection, since it pruned off a disproportionately large number of those the nation could least afford to lose. With the voluntary system of military service which we had during the first two years of the present war, the call of their country attracted the more chivalrous, the more virile, the more courageous, the more patriotic, and the high death-rate among combatants as compared with non-combatants meant, in some measure at least, an impoverishment of the race—a reversed selection of the stock of possible parents. The finest men were those who volunteered for, or to whom were set the most desperate enterprises, and the conspicuously brave were particularly apt to be killed off.

And so with compulsory military service, the young and strong and healthy men are deliberately selected to be exposed to imminent danger of death or disablement, while the old and feeble and unfit are carefully preserved, with the clergy, and the inmates of our asylums, and the members of the House of Commons. It is enough to make a eugenicist scream.

Prof. Thomson suggests that recruits with a good record who had reached maturity should be encouraged to marry. There is patriotism in dying for one's country, perhaps also in marrying for her.

But war, however successful it may be, has its sacrifices in treasure as well as in blood, and in waging war as we have been doing for four years upon a scale unprecedented in the history of the world there has been a corresponding expenditure of money. Up-to-date votes of credit for the carrying on of the war have reached the stupendous sum of £7,342,000,000, and the cost per day is now £6,848,000. It has been pointed out that, notwithstanding this enormous expenditure, the

money market has been in a state of ease that has not been paralleled for a quarter of a century. The country has been apparently rolling in money, and our credit has never been higher. The volume of insolvency throughout the United Kingdom has decreased. Unemployment does not exist; there is no destitution or distress, and trade and industry have on the whole been but little interfered with. And while we in this country have been, although at war, enjoying prosperous times, trade in other and neutral countries, and even in our own dominions beyond the seas, has been unduly depressed. This state of matters seems exactly the opposite to what one would expect.

Prof. Shield Nicholson points out that our apparent prosperity as compared with countries which are at peace may be likened unto that of a landowner who finds himself with plenty of money to spend on having effected a mortgage on his estate. "The War Loans and the various extensions of Government Credits are essentially the same as the borrowings of the landowner, and the immediate effect is the same, though the moral motive is different. Every new mortgage is accompanied by an abundance of ready money and corresponding extravagance. The reaction comes when the loan has to be renewed—when the capital has gone and the interest has to be paid." "The immediate effects of the expenditure of new loans and new taxes must always be distinguished from the ulterior effects. The immediate effect is an increase of spending power; the ulterior effect is a diminution of capital. If the savings of the year are invested in war loans they cannot at the same time be invested in industrial undertakings. If the taxes on income are doubled, the annual savings must be less. War taxes do not cease with the war, and the interest on war loans is practically perpetual."

If the matter is gone into carefully it will be found that the trade activity which we have experienced during the progress of the war has been confined in great part to industries supplying the Government and the governments of our Allies with commodities required in war-like operations. Such activities will at once cease on the conclusion of peace.

It is therefore quite obvious that with the enormous cost of the war, added to a national expenditure which even in pre-war days had increased to an alarming extent, this country is going to have an extremely heavy financial burden to carry for many years to come—in the case of most of us for the remainder of our lives. A war expenditure of £7,342,000,000 means over £250,000,000 of extra taxation yearly, simply to pay the interest. With increased taxation all over the world, less money to spend, and less to devote to industrial enterprise, it seems more than probable that we have before us more difficult times than we have ever experienced, more difficult than have been experienced for a century. History is apt to repeat itself, and the leanest years in our

national history were those which immediately followed the Napoleonic wars. During the lean years to come there will be a tightening of the money-bags, an understanding that the resources of the country must be husbanded, and the springs of charity and generosity will shrink and show a tendency to dry up. There will be, if I am not mistaken, a closer scrutiny by the heavily taxed general public of expenditure by local authorities than we have been accustomed to.

The moral of these reflections is that we, as individuals and as trusted public officials, will have to adjust ourselves to more difficult conditions than we have experienced in the past, and will have to practise thrift as we have never practised it before. It will be more than ever our duty to initiate plans for thrifty administration, to encourage and back up our committees in being "thrifty in expenditure, in postponing as far as possible all extraordinary expenditure, and in administering our asylums as economically as can be done with efficiency."

Dark and lowering, then, is the cloud of war: but the silver lining is there all the time. A glint of it is seen in the development of patriotism and kindness as they have never been seen before—qualities which have enriched all classes of the people. Good may come even of war when the spirit of the nation is in it. Lord Rosebery tells us that the war has given us a new lease of Empire—the threatened danger has joined the Empire together in a way that could not be accomplished by a century of federal government. Where, now, are the croakers who mourned the decadence of the race, and predicted that our Army would be scattered like thistle-down by that of a continental adversary? The response from the ends of the earth to the call for men, and the deeds of those men on land and sea, and in the air, have silenced for many a day the long-faced prophets of evil. There is, says the Bishop of London, a new spirit in the nation. There must be something noble, if not in war, at least in what war brings out in human nature.

And after all, we cannot, if we would, be blind to the fact that in all ages war has had much to do with the progress of civilisation. Great wars have been the inspiration of great things. The great wars, for example, between Persia and Greece, and the defeat of Persia by land and sea, were the inspiration of the Greek development. The world owes the literature of Greece, the architecture and sculpture, and the philosophy of Greece—the whole "glory that is Greece," to the wars with Persia. Similarly the extraordinary development of the arts, literature, and science of the Roman Empire followed centuries of almost continuous warfare. So it has been throughout the ages right up to our own time—the war-like nations have been the virile, progressive nations, and it is they who have done the great things by which nations are made immortal.

The enervating effort of a prolonged period of peaceful prosperity may be observed in nations as in individuals. Nations, like men, may become fat, flabby, and lethargic, requiring periodically a course of energetic eliminatory treatment if incurable degeneration is to be prevented. Lord Bacon tells us that a foreign war is the remedy : "A Civil War, indeed, is like the Heat of a Fever ; but a Foreign War is like the Heat of Exercise, and serveth to keep the Body in Health." "The solemn call to arms, the sense of national danger, the striving for victory, the determination to defy the strength and arrogance of the enemy, and to secure at all cost the triumph of freedom and justice, the realisation of the grandeur of the part that is being played in shaping the destinies of the world, these raise the standard of national character, brace the national nerves, and kindle the spirit of pride and exhilaration by which great deeds are accomplished, and an Empire's perpetual youth secured."

The state of affairs in our country during the period immediately following the coronation of King George suggests the thought that possibly the war with Germany saved the Empire from events infinitely more damaging to its future. Stephen McKenna describes it in *Sonia* : "On the other hand, the condition of England was a matter for considerable searching of heart. A spirit of unrest and lawlessness, a neurotic state not to be dissociated from the hectic, long-drawn Carnival that continued from month to month and year to year, may be traced from the summer of the Coronation. It is too early to probe the cause or say how far the staggering ostentation of the wealthy fomented the sullen disaffection of the poor. It is as yet impossible to weigh the merits in any one of the hysterical controversies of the times. Looking back on these four years, I recall the House of Lords' dispute and a light reference to blood flowing under Westminster Bridge, railway and coal strikes characterised by equally light breach of agreements, a campaign in favour of female suffrage marked by violence to person and destruction to property, and finally a wrangle over a Home Rule Bill that spread far beyond the walls of Westminster, and ended in the raising and training of illegal volunteer armies in Ireland. Such a record in an ostensibly law-abiding country gives matter for reflection. Sometimes I think the cause may be found in the sudden industrial recovery after ten years' depression following the South African War. The new money was spent in so much riotous living, and from end to end there settled on the country a mood of fretful, crapulous irritation. 'An unpopular law ? Disregard it !' That seemed the rule of life with a people that had no object but successive pleasure and excitement, and was fast becoming a law unto itself.

"When, therefore, O'Rane went to Yateley, he went in protest against certain officers at the Curragh, who, holding the King's Com-

mission and with some few years of discipline behind them, let it be known that in the event of certain orders being given they did not propose to obey them. Then, if ever, the country was near revolution.”⁽¹⁾ Then came the sudden call to arms, and in the twinkling of an eye parties were no more, controversies were forgotten, and the nation settled down as one man with calm determination to the grim task of fighting for its very existence.

The silver lining of the war cloud may also be seen in the remarkable decrease of serious crime throughout the whole country since the war began. The darkness of the streets of our cities, and the reduction in the strength of the regular police-force, would seem to supply the criminal with unexampled opportunities, and yet the police-court returns have never been lighter. So also in the case of paupers and vagrants. The number of paupers per thousand of the population is lower than it has been for half a century, and Salvation Army shelters have lost nine-tenths of their habitual occupants. The explanation lies to some extent no doubt in the increased demand for labour, but surely the bracing and stimulating effect of a great war also plays a part. A police-court magistrate has it that “the criminal has turned patriot.” It may be, it is said, that slumbering in the breast of the most hardened of criminals there is a tiny spark, which, fanned by the outbreak of war and the realisation of the country’s need, bursts into the purifying fire of true patriotism.

The effect of war upon the mental health of a community is a subject upon which the gigantic struggle should throw light. Stoddart tells us that war is a potent cause of insanity, and that insanity was rife among our soldiers during the South African War, and also among the Russian soldiers during the Russo-Japanese War.⁽²⁾ References to the matter in other modern text-books are vague, and for any definite information we must go back to the observations of French physicians during the Franco-Prussian War and the Commune, 1870–71. Certain facts seem fairly well established, and they are of interest to us at the present time. For instance, it is recorded that the number of patients received in the asylums of France during the period of the war was smaller than usual, and that in the summer of 1871, during the height of the Commune, there were fewer insane in Paris than there had been for years. Legrand du Saulle concludes that the late war (that is, the war of 1870) is another proof that “the gravest political events, although they may give, at the moment, a colour to the particular form of insanity, do not produce, as is commonly supposed, an increase in the number of lunatics.”⁽³⁾ Lunier observed that melancholiacs forgot their sufferings in the fearful suspense of the siege of Paris, and that patients who were the subject of delusions and hallucinations got rid of them, at least for the time. He agreed with Baillarger and Legrand du Saulle that “the

excitement of the war, the rousing influence it exerted on many minds, was to some extent a set-off against its baneful effects on the mind," and that in those predisposed to mental disorder, "the war acted as a powerful diversion to avert the outbreaks of insanity."

On the other hand, we have Morel insisting upon the great frequency of insanity arising from the fear of a Prussian invasion, and stating that the burning of villages caused in many instances "crises of despair to which succeeded a state of melancholia with tendency to suicide." He agrees with Bourdin and Pinel that the effects of war in the production of insanity are more likely to be seen after the war than during its course; that it is the children unborn who suffer—"that they are more irritable, more disposed to become melancholy, imbecile, or epileptic."

Ireland tells us that Baron Percy, a French military surgeon, observed that out of ninety-two children whose mothers had been exposed to the terrors of a tremendous cannonade at the siege of Landau in 1793, sixteen died at the instant of birth, thirty-three languished from eight to ten months and then died, eight became idiotic and died before the age of five years; and two came into the world with numerous fractures of the bones of the limbs.⁽⁴⁾ One thinks of what has happened to Belgium and north-eastern France, and wonders what the aftermath will be.

The official records of the Boards of Control and the reports of asylums show that during the present conflict, which has now lasted for four years, the number of cases of insanity occurring in this country has diminished. Whether this has also been the case in the countries of the other belligerents one does not know, but, so far, our experience seems to be in accord with that of France during the war of 1870. Whether the decrease will be permanent, or merely temporary and coincident with the period of hostilities, time alone will determine, but one is fairly safe to assume that the burden of insanity to be borne by the country when the war is over will not be less than it has been in the past, and that the burden is no inconsiderable one a very few figures will be sufficient to show.

In the Annual Report of the London County Council for 1913, it is stated that the number of insane patients under care in its asylums was 21,000, and that their maintenance involved an annual charge of £617,000. Since the London County Council came into existence twenty-five years before, the number of insane under its care had more than doubled, and the cost of maintaining them—and this is an important point—had increased more than threefold. If now we take the corresponding figures for the whole of the three kingdoms, we find that at the end of 1913 there were 172,000 insane patients under care who were supported out of the rates at an annual cost of £4,600,000. In comparison with the cost of carrying on a great war this seems but the

veriest trifle—it would be swallowed up by even our own expenditure, not to speak of that of our Allies, in about sixteen hours—yet it would be sufficient to add to our Navy two super-dreadnoughts, built, armed, and equipped, every year.

Now, the worst of it is that the expenditure on the insane is, to a large extent, like the expenditure on war, unproductive, the greater part of the money being spent—it may be very well spent—in the upkeep of persons who are for all practical purposes with our present knowledge permanently disabled, and who will be a burden on the community for the remainder of their lives. It is, perhaps, within the mark to estimate that of the 172,000 rate-supported insane in Great Britain and Ireland at the end of 1913, the proportion of 75 *per cent.*, or 129,000, costing for their support for one year £3,450,000, were chronic, incurable cases, fated to remain for the period of their lives a charge upon the resources of their fellow-citizens.

It is, of course, fully recognised that there is no more helpless and pitiable class than the chronic insane, bereft for their lives of the priceless possessions of health and personal liberty, and none calling more urgently for the humane instincts of the community. And let me at once express the conviction that no saving of expenditure which would involve a diminution of their comfort or would interfere with the amelioration of their conditions of life would be tolerated for a moment by the ratepayers of this country, who, after all, by the exercise of their generous instincts in paying the piper have the right to call the tune.

It is not, therefore, by niggardliness in the provision made for the maintenance of the unfortunates who are hopelessly and incurably insane that expenditure may be lessened, but rather, if it be possible, by limiting their number, and the problem before us at this great crisis in our national history, as the advisers of those who are responsible for them to the community of ratepayers, is to consider whether this may be by any means accomplished.

This brings us to the question of the prevention of insanity—a subject all-important, because it is on preventive measures that our hopes for the future must be largely based. “The highest function and main object of medical science is the prevention of disease.” As time goes on the collective responsibility of the medical profession in regard to social problems which concern the health of the people is being recognised and accepted. Its attention, therefore, is being more and more directed to the study of disease as a social evil, to its causes, and to the measures which may be taken to effect its cure and prevention. Following the recognition of this collective responsibility of the profession comes sooner or later a demand by the profession and the enlightened public for State interference in the interest of the health of

the people, and it must be admitted that, whenever exercised, this interference has, upon the whole, brought good to the community. Bubonic plague, thanks to sanitary precautions, has now no terrors, and a case of typhus or of smallpox is something of a curiosity. When scarlet fever appears it is hunted down, traced to its origin, and stamped out with the confidence begotten of repeated victories. With the attention now being directed to tuberculosis it will doubtless in the course of time, and with a generous expenditure of money, share a similar fate.

Now in the case of insanity the attitude of the public and of the State has until a very recent date tended rather to encourage the propagation of the disability than to suppress it. While the citizen deficient in this world's goods but of ordinary mental capacity has had to struggle along, alone and unassisted, in a life-long endeavour to keep body and soul together, the lives of the unfit have been carefully preserved, and in the case of too many of them little or no attempt has been made to prevent them from reproducing their kind. "Sterility, Mott tells us, often accompanies marked mental deficiency, but there is no limit to the fertility of the higher grade imbecile; in fact, the poorer the stock in mental and physical power and civic worth, the more prolific it is."⁽⁶⁾ And, to a great extent, is it not the idiot and imbecile who are probably sterile that are shut up in asylums and similar institutions, while the higher grade defective goes at large, and gives rein to the instinct with which for some inscrutable reason he has been so richly endowed? And this has been permitted in the full knowledge of the tendency of like to beget like, and of the hereditary nature of the infirmity.

In his Presidential Address in 1906, Sir Robert Armstrong-Jones dealt with this point. "We accept the statement," he said, "that society is bound to provide for and to support its own languishing sick and feeble, but when 1 in every 283 persons of the population is an inmate of a lunatic asylum, when 1 in every 157 during the year 1905 has undergone a term of imprisonment for offences against the law, when 1 in every 100 children of elementary school age is so mentally or physically defective as to require special educational facilities, and, further, when 1 in every 31 in London is a pauper, it is surely time that some stir was made!

"The whole of this so-called 'defective class' have a right to be protected against themselves, and the control which they lack should be supplied to them from without; at the same time, society has a right to be protected from the transmission of their defective qualities to future generations."

Since Sir Robert Armstrong-Jones wrote these words something of a stir has been made. The public has been to some extent educated to

a sense of its responsibility in regard to these unfortunates. The public conscience has been aroused. There are indications that "that treacherous phantom which men call Liberty" shall no longer in dealing with mental unsoundness be allowed to override every other consideration, and that in a question between the good of the State and the liberty of action of an individual the State must come first. There is a confident expectation that when the war is over, and normal conditions have returned, a large number of examples of an unfortunate class of persons too long neglected will be placed under care under the provision of the Mental Deficiency Acts, and that by their segregation and control the propagation of the mentally unfit will be to some extent checked.

But, after all, such measures may lessen the tendency to degeneration, but cannot improve the race of men. The breeding of a higher type—the aim of eugenics—will be more difficult to attain.

Dr. Chambers, in his scholarly Presidential Address delivered in 1913, predicts that "scientific investigation will, in the not remote future, justify our belief that there are persons leading active and useful lives, who yet, by reason of some acquired physiological modality, should, in the interests of the race, abstain from marriage." Further, "that research will, we hope, aid in defining for us the circumstances in which the avoidance of marriage is to be counselled; and if for the moment it is not always easy to assert that this strain should be terminated or that one maintained, we can at least be sure that, if in some cases the germ-plasm is improvable, there are others of which the contrary may emphatically be said."

Galton shows that Athens, by a system of partly unconscious selection, built up in one century a magnificent breed of human animals which were in average ability as much above our own race as our race is above that of the African negro. "This estimate," he says, "which may seem prodigious to some, is confirmed by the quick intelligence and high culture of the Athenian community, before whom literary works were recited, and works of art exhibited of a far more severe character than could possibly be appreciated by the average of our race, the calibre of whose intellect is easily gauged by a glance at the contents of a railway bookstall." "It is essential," he says, "to the well-being of future generations that the average standard of ability of the present time should be raised."

But how is the average standard to be raised? Proposals for breeding an improved race of men by marriage restrictions and regulations, however excellent in theory, have the fault that in practice they are unworkable. It is all very well to say let those who are intellectually gifted, and who are strong and vigorous physically, marry when they are young to that they may have large families of children with similar qualities,

and retard the average age of marriage of those that are weak, so that they may have few children or none at all. In a few generations the strong and vigorous will greatly outnumber the weak, who, with a continuation of the selective process, will in time be eliminated altogether.

But who is to say these are the strong, and those are the weak ; these are to marry, and those are to refrain ? And how to compel people to marry, or not to marry ; to have children, or not to have children ? Who is to say to the priest, the man of natural abilities, strong and vigorous—"Celibacy is not for you : your country wants you ; renounce your vows, marry and beget children like unto yourself ?" And to the erotic neuropath—"You are unfit ; marriage is not for you ?" The possibilities of improving the race and coincidentally diminishing the occurrence of insanity by methods such as these are theoretically magnificent. In practice such methods would not be tolerated. The whole subject bristles with difficulties, and, while public opinion is maturing, and people have attentive ears for instruction and guidance, it is realised that progress must necessarily be slow, and that precipitate action in the form of rash proposals for the compulsory limitation of marriage would probably have the effect of indefinitely postponing the desired result.

But there is another method. We are losing day by day in the great world-war the flower of British manhood, and the race depends more and more for its strength and vigour upon the number and the health of its children. And if we cannot, in the meantime at least, regulate the number and the quality of these by arrangements suggestive of the stud-farm, it is surely our duty in the interest of self-preservation to make the most of the material available. We must take the child as it is, with all its defects, hereditary and acquired, and make the best of it. We can see to it that it does not suffer through ignorance or neglect, that it receives the best of care from the earliest moment of pre-natal life up to the full development of manhood or womanhood, and, incidentally, we can care for and protect the mothers of the race, upon whom so much now depends, so that their supreme function may be maintained at the highest point of efficiency.

This is a matter for State supervision and control, and we welcome the fact that the State is taking it up in an enlightened and progressive manner. There is also here full scope for voluntary effort, and so the work of the general practitioner of medicine, the midwife, the health visitor, and the Public Health Department can all be co-ordinated with the happiest result. Mott tells us how efficiently this has been done in France ⁽⁶⁾, and Prof. Pinard, a well-known authority on the rearing of children, has given a remarkable report to the Academy of Medicine on the birth statistics since the war began. "Contrary to all precedents,"

he says, "the health of war children and their mothers has not been injuriously affected by the war. On the contrary, the Paris death-rate of mothers in childbirth has fallen, the proportion of stillborn infants has declined, the infants' death-rate has fallen, and the proportion of infants abandoned to the foundling hospitals has also decreased." Finally, the Professor affirms: "Never has as fine a set of babies been seen in Paris as has been born since the war. This is greatly due to the assistance given to mothers by the association started after the outbreak of war under the patronage of Madame Poincare." It should be stated that Prof. Pinard's report was rendered at a comparatively early period of the war.

Of no less importance is the case of the health of the child during its years at school. It has at long last been recognised that to attempt to cram with book-learning a pining, diseased, ill-fed, and insufficiently-clothed child is not only a waste of public money, but downright cruelty.

We who have the care of the wreckage of humanity are well aware that in a large proportion of cases the breakdown occurs during the period of growth and development. We cannot but be interested, therefore, in the important educational measures now under the consideration of Parliament. We look forward with hopefulness to the results to be expected from these legislative enactments, and more especially to the provisions for the medical care, the feeding, the clothing, the physical training, and all the arrangements which have for their object the upbringing of a healthier, and therefore a stronger and saner race of men and women. One is convinced that, if these matters are attended to as they should be, the intellectual development of the child during the years at school will naturally follow as a matter of course, and may to a large extent be trusted to look after itself.

But the necessity for the care and supervision does not cease with his days at the elementary school. When this point has been reached the great majority of the youth of the nation are launched into the world and begin to earn, and it is still necessary to guide and train them to be healthy and effective members of the community. It is when a boy has thrown off the restraints of school-life, and has attained the capacity to earn, that his destiny is fixed. He has come to the dividing of the ways. Wisely guided, he may choose a trade or occupation in which, with the assistance of the continuation school, and after years of patient labour with small remuneration, he becomes a good and useful citizen. Or, without guidance, and impelled, perhaps, by parental short-sightedness and greed, he may enter the ranks of unskilled labour, in which, though at first more money may be earned, there is no advancement to be looked forward to—nothing but a life of drudgery, with gradual deterioration mentally and physically.

When boys and girls have once left school, and have lost the school habit, it is difficult to get them back to classes of any kind, and therefore the educative process should be continuous—the term “continuation classes” suggests this—and they should pass on as a matter of course from the elementary school to the classes appropriate to their life-work. In this country these continuation classes have not been a pronounced success for the reason, first, that they have been voluntary instead of compulsory, and boys and girls easily find more attractive ways of spending their evenings than in attending classes of any kind, and, in the second place, because the classes are held in the evenings after a full day's labour, during hours which should be devoted to recreation or sleep. The remedy is obvious. First, the classes should be compulsory; pupils should pass on to them from the elementary school as a matter of course. Once make them compulsory and the compulsion will not be felt. Secondly, they should be part of the day's work, and therefore should be held in working hours.

It has been the experience in Munich that it pays to run these trade schools, and to endow them liberally. It pays the employers to give time off for technical training, because of the increased skill of the workers thereby attained. It pays the city, because its reputation for good work in its factories is increased. It is satisfactory to note that in the Education Bills now before Parliament this important part of the training of the youth of the nation is dealt with as its importance deserves.

But, it may be asked, what has all this to do with prophylaxis—with the lightening of the burden of insanity? Dr. Chambers predicts that the time is coming when educative processes will be guided by nicer discrimination than we have hitherto attempted, and that the expert may then find that he is called upon to play in the adjustment of the organism to its environment a part of no small importance in the prophylaxis of mental break-down. He warns us not to try to grow peaches on the hill-top, or to spoil fine peasants that we may have inefficient clerks, and suggests that we should learn, in choosing human material for special purposes, to be guided not only by its apparent texture, but by our knowledge of its derivation.

Much will depend, therefore, upon the wisdom and common sense not only of those to whom the supreme control of our educational system is entrusted, but more especially to the teachers in the schools and classes, who come into direct individual contact with the youth of the nation, and who have it in their power by suggestion and advice to guide their pupils into paths of life suitable to their intellectual, no less than their physical capacities.

There is no likelihood that the raising of the average standard of intellectual ability of the race would be accompanied by physical deterioration. Galton tells us that we need as much backbone as we

can get to stand the racket to which we are henceforth to be exposed, and as good brains as possible to contrive machinery for modern life to work more smoothly than at present. And he shows that there is no incompatibility between the strong arm and high intellectual capacity. He says—"I do not deny that many men of extraordinary mental gifts have had wretched constitutions, but deny them to be an essential or even the usual accompaniment. University facts are as good as any others to serve as examples, so I will mention that high wranglers and high classics have been frequently the first oarsmen of their years." . . . "It is the second and third rate students who are usually weakly. A collection of living magnates in various branches of intellectual achievement is always a feast to my eyes, being, as they are, such massive, vigorous, capable-looking animals."

The sound mind goes with the sound body, and there is abundant reason for the hope that, by increased attention to the care of the youth of the nation, a race of men will in time be evolved more capable than the present one to bear the racket and strain of modern life.

Sir Robert Armstrong-Jones told us, in his Presidential Address, that if only the evils of alcohol and venereal disease were disposed of, then half the problem of insanity would disappear with them. The evil effects of alcohol as an exciting cause of insanity, as the determining agent in bringing into activity brain-weaknesses of all kinds, and as a cause of race degeneration, have been preached by social reformers, and in particular by members of our own Association for generations. Perhaps through the constant repetition of the warnings, and, it may be, to some extent owing to extreme and intemperate proposals of temperance faddists, the results as regards the wage-earning classes of the community have been disappointing. Since the great war began, however, events have occurred which should surely rouse the nation to the enormity of the evil, while demonstrating the fact that it is one which can be mastered by strong and resolute government action. We were warned by the Prime Minister, and by those at the head of these great undertakings, that, owing to the drinking habits of those employed in our ship-building yards and armament factories, the output of ships and munitions of war was in danger of being insufficient for the needs of the forces engaged in fighting for the preservation of our country. And we learned that when drastic restrictions were enforced more and better work was accomplished, and nothing but good resulted to all concerned.

Another great social evil with which the State has at last been compelled to deal, by an awakening of the public conscience, is the prevalence of syphilis, and its effects upon the health of the community. In our asylums syphilis presents itself to us for the most part in two forms, *viz.*, general paralysis and congenital mental deficiency, although,

in the cautious language of the official report, "it is not possible to affirm that syphilis as an ætiological factor in the production of insanity may not play a considerable part even in those forms of disorder in which such an association is comparatively infrequent." (7)

We are agreed, I take it, since Noguchi's discovery, that syphilis is an essential cause of general paralysis; and that if we could abolish syphilis to-day there would not be a case of general paralysis in existence twenty years hence. What this would mean to the nation will in some measure be indicated by reference to the statistics relating to the subject compiled by the General Boards of Control. In England the number of deaths from general paralysis in asylums during the year 1913 was 1,753; in the Scottish asylums for the same period the number was 221. These figures represent only the mortality from recognised cases of the disease in asylums. No account is taken of cases occurring elsewhere, and that many cases go unrecognised, in asylums, in other institutions, and in private care there is no doubt.

General paralysis is probably a sequel of untreated syphilis or inefficiently treated syphilis. Browning points out that syphilis is a disease whose manifestations are of the most multifarious description, so that it frequently escapes detection, while remaining infectious all the time. Further, that the subjects of syphilitic infection, "unless treated by the most energetic methods at our disposal, pass almost invariably through the carrier stage," and that "while, even without treatment, apparently complete restoration to health may follow the primary and secondary stages, the presence of the active virus is shown by the fact that the latent syphilitic is capable of infecting others, and the same holds good when the latent state is induced by mercurial treatment."

The loss of infectivity may not occur for many years. He records the case of a man who was treated with mercury for about six months after the appearance of the primary sore; during the subsequent twenty-five years he has remained apparently perfectly healthy, but he infected his wife, whom he married thirteen years after contracting the disease. The latent syphilitic, then, in the early stage, although apparently healthy, is a source of great danger to others, and "cases in this category are, in the absence of a history, practically unrecognisable by ordinary clinical methods."

Browning directs attention to the further complication introduced by the fact that the primary and secondary stages of syphilis may be missed altogether, so that the affected individual is actually not aware of his state. He instances a case of tabes in a highly intelligent and well-informed man, who had never, to his knowledge, presented any of the early signs of syphilis, although he volunteered the history of exposure to possible infection. The probability is, however, that although a few may escape, the great majority of syphilitics receive treatment of

some sort. Whether that treatment is likely to result in the cure of the disease is quite another matter.

McDonagh states that in the primary stage a cure is possible provided sufficient injections of salvarsan, or an efficient substitute, are given to procure a negative Wassermann reaction in the blood withdrawn between the seventeenth and forty-eighth hour after the last injection, and that the treatment is further augmented by twenty-four intramuscular injections of mercury—given within twelve months. In the secondary stage a cure may also possibly be obtained, but the mercury injections should be continued for another year. Success, he says, for the same treatment in the latent stage of the disease and in the stage of early recurrence is improbable, while in the stage of late recurrences—such as gummata and nervous syphilis—a cure is impossible.

McDonagh emphasises the fact that insufficient salvarsan or other similar treatment in the early stage of syphilis will do more harm than good, as it gives the patient a false sense of security, and renders him for a longer period a danger to the community. He instances cases of patients who had had two injections of salvarsan infecting others when they themselves thought, and had been told, that they were cured. He states that the syphilitic organisms reach the nervous system very early in the disease, and that nervous lesions can only be prevented by sterilising the whole body by several injections given at short intervals as early as possible. He takes a gloomy view as to the probable effect on the incidence of syphilitic nervous diseases of salvarsan or other similar treatment as usually carried out. He holds the opinion that these diseases are on the increase, and feels very strongly that, owing to the spasmodic and inefficient manner in which these remedies are prescribed, tabes and general paralysis will, in a few years' time, increase even more rapidly than is the case to-day, and that they will appear more quickly after the infection than hitherto.⁽⁸⁾

In no disease can it be more truly said that the sins of the fathers are visited on the children than in syphilis. With the very union of the two elements the germ-plasm may be infected, leading to pre-natal death, or to the birth of an infant degenerate and diseased. Recent researches by Ivy Mackenzie and Carl Browning, by Kate Fraser and Ferguson Watson, by Leonard Findlay and Madge Robertson, have shown that a large majority of idiots and imbeciles are syphilitic, and the inference is that the syphilis accounts for their non-development. Prof. Whitridge Williams, of Baltimore, in an investigation into the cause of 750 foetal deaths occurring in 10,000 consecutive admissions to the Obstetrical Department of the Johns Hopkins' Hospital, found that in 186, or 26·4 *per cent.*, the ætiological factor was syphilis. In addition, of the children born alive 164 were syphilitic, so that no fewer than 350 syphilitic children had been born of the 10,000 women.

What is wanted is that the public should be awakened to a realisation of the fact that there is in syphilis rampant in their midst a deadly, contagious, and hereditary disease, a disease which kills a countless number of unborn innocents ; which is the cause of the mental and bodily decrepitude of a large proportion of our idiots and imbeciles ; which in its various manifestations results in life-long incapacity, bodily suffering, and mental anguish to numbers of people who in happier circumstances would be capable and vigorous citizens. And yet withal, a disease which is preventable ; which, in its earlier stages at least, and with proper treatment, is curable ; and which, by energetic, resolute, concerted action by the great civilised nations could be stamped out and abolished for ever.

The measure recently passed by our Legislature is all to the good, inasmuch as by the publication of the Report of the Commission, of the debates in Parliament, and of various articles and letters in the Press, the veil has at last been lifted and the attention of the community directed to the formidable nature of the evil. What the result will be is in the lap of the future ; but to my mind, an attempt to deal with a world-spread infectious plague like syphilis without compulsory notification, without compulsory treatment, without joint action on the part of other nations, is also without the qualities which command success. In the light of McDonagh's teaching it is more likely to result in an increase in the incidence of the nervous manifestations of syphilis than the reverse.

So far for the possible reduction of the burden of insanity by preventive measures. Let us now consider very shortly whether anything may be done in the same direction by improving our methods of dealing with the insane.

We are at once confronted with the dismal fact that during the past thirty years there has been a continuous lowering of the recovery-rate in our asylums. This has been ascribed by the Commissioners to the increased use of observation wards in connection with parochial hospitals, to the accumulation of chronic patients, and to the improved hospital care and nursing in asylums leading to their being freely used for the reception of patients whose age and whose mental and physical condition are such as to preclude hope of recovery⁽⁹⁾. We know how true this is, and how the most trifling mental abnormality is used as the pretext for sending to the asylum, as the last haven of refuge, the most helpless and hopeless cases of physical disease and decay.

But surely we are not satisfied that better results cannot be attained ? Among the chronic patients accumulating in our wards there are many whose failure to recover was not because of its impossibility, but because our knowledge of disease is insufficient, and our treatment correspondingly defective. Who can say because we have not treated

paranoia, or dementia præcox, or general paralysis, or epilepsy, so that recovery takes place, therefore these diseases cannot be cured? To the investigator with the true spirit of scientific research failure to obtain the desired result is but a stimulus to further and more strenuous effort. "Why should insanity be left behind when so much forward endeavour is made in general medicine?"

In our daily routine of ward work perhaps one of the greatest difficulties with which we have to contend is this—that we see comparatively few patients who are not the victims of the end-products of disease. Our patients do not come under care until the most hopeful opportunities for arresting or curing the malady from which they suffer are past and gone. If this be true of patients in general hospitals, about whom Dr. Guthrie Rankin has written in his article on "The Borderland of Disease"⁽¹⁰⁾, how much more does it apply in the case of patients admitted to asylums? It has, indeed, been the burden of complaint in our annual reports to committees so long as one can remember.

It is our duty, I submit, not only to point out that delay in having patients placed under treatment diminishes the prospects of recovery, and thereby increases the burden of insanity, but also to show, if we can, the prevailing causes of such delayed treatment, and the remedies which may be devised to meet them. Many of them are causes which operate equally in the case of patients of any general hospital: an unwillingness to give up work or domestic duties; a careless indifference to symptoms which, though troublesome, do not in the meantime involve total incapacity; a dread or dislike of remedial measures and of hospital rule and discipline. Others are specially applicable in the case of mental patients: failure of the doctor to recognise the symptoms of disorder until well advanced; dread of the asylum, or of the stigma of lunacy; the absence of proper facilities for the early treatment of mental disorder, so that, broadly speaking, in the case of the great majority of patients, expert treatment is unattainable until the disease has so far advanced that the patient can be certified insane; the pauperisation and loss of civil rights involved in certification.

There must be grave defects in a system under which a man cannot obtain skilled advice and treatment for his malady until it has become so confirmed as to be practically incurable. For suggested remedies for these defects I would refer you to the valuable report of the Committee of this Association *re* Status of Psychiatry, and also to Dr. Bond's admirable address on "The Position of Psychiatry and the *Rôle* of General Hospitals in its Improvement"⁽¹¹⁾.

It must be obvious to everyone who has given the subject serious consideration that there are serious disadvantages in the absence of a close relationship between psychiatry and the other departments of

medicine. To bring about such a relationship one of the first necessities is a revision of the methods of attempting to impart to medical students a knowledge of mental diseases. Note Dr. Guthrie Rankin's criticism of the methods of teaching clinical medicine: "The only practical knowledge of disease which the undergraduate meets with, and the only clinical evidence which is brought before him of ill-health, is the material chosen from the wards of the hospital, or from its *post-mortem* rooms and pathological museums, to illustrate the ravages of which disease is capable when it has become a firmly-established condition in the life, or a demonstrable cause of the death of the patient chosen for illustration. . . . But, necessary and valuable though all such instruction is, it only illustrates, after all, the damage which disease inflicts—a damage which, in many instances, is beyond repair, and at best is typical of an end-process that has scarred the patient, and left him a less perfect machine than it found him. Of the conditions which preceded his illness, the circumstances upon which probably the departure from normal health depended, the proclivities of disease to which his inheritance and upbringing exposed him, and the intimate habits of his life which brought him within the danger zone, the student learns little or nothing."

How applicable is the criticism to the present system of tuition in mental disease. "The student," says Dr. Bond, in the paper I have quoted, "sees only certified cases of insanity, and for the most part cases in which the stage of the malady is considerably advanced." He has practically no opportunity at all of seeing the cases with which he will afterwards be confronted in family practice—those borderland and incipient mental cases with which for the welfare of the patient and his own credit it is so important he should be acquainted, and further, his practical knowledge of mental cases is limited to, perhaps, less than a dozen weekly visits to an asylum, whereas "of all branches of clinical medicine the student of mental disease should have, under proper supervision, free and daily access to a mental ward and mental out-patient department."

To those who would urge objections to the presence of students in mental wards I would quote the words of Sir William Osler: "If one wishes patients well taken care of, their diseases thoroughly studied, and their treatment in every detail up to date, have medical students in the wards and out-patient departments" (13).

Surely, then, it is our duty to point out to our Committees that in the interest of the patient and of the student—the medical practitioner of to-morrow—no less than in the interest of the ratepayer, the remedy is obvious, and would be adopted at once and without hesitation in the case of any other non-infectious disease to which man is liable. It is that advocated years ago by Sir Thomas Clouston, and later by

Dr. Bond in the address already alluded to—the establishment of mental wards, with associated out-patient departments, in all the large general hospitals throughout the country. In the case of hospitals connected with medical schools these would naturally assume the form of full psychiatric clinics.

To carry this out it would be necessary to reorganise the present system, and to sever once and for all its connection with the Poor Law—the system “which compels all persons, except those able to pay adequately for their maintenance, to apply to the Poor Law authorities in order to secure treatment,” and under which treatment may be refused or delayed until the disease has become so pronounced that the patient can be certified insane—in other words, under which treatment may be delayed until the curable stage of the malady has passed. “A system which artificially creates paupers in order to obtain medical treatment necessarily acts as a deterrent, so that too frequently there is serious and even disastrous delay.”

We shall look to the Ministry of Health to carry out this reform.

In conclusion, Ladies and Gentlemen, I thank you for your attention, and apologise for the length and discursiveness of my remarks.

(¹) *Sonia*, by Stephen McKenna, p. 258.—(²) *Mind and its Disorders*, p. 163.—(³) *Annales Medico-psychologiques*, vol. vi, p. 222.—(⁴) *Mental Affections of Children*, p. 24.—(⁵) *Mental Development*, p. 95.—(⁶) *Ibid.*, pp. 95–98.—(⁷) *Sixty-eighth Report of the Commissioners in Lunacy to the Lord Chancellor*, part 1, p. 29.—(⁸) *Brit. Med. Journ.*, 1914, vol. ii, p. 616.—(⁹) *Fifty-fourth Annual Report of the General Board of Commissioners in Lunacy for Scotland*, p. xii.—(¹⁰) *Brit. Med. Journ.*, 1914, vol. ii, p. 821.—(¹¹) *Journal of Mental Science*, January, 1915.—(¹²) *Brit. Med. Journ.*, January 3rd, 1914.

Observations on the Rolandic Area in a Series of Cases of Insanity.

Abstract of a paper read at the Quarterly Meeting, May 28th, 1918.

By JOHN TURNER, M.B.

I HAVE for many years past been impressed with the prevalence of a peculiar form of Betz cell in the brain of the insane, and in 1914 I had the opportunity of comparing the picture as seen in the cortex of the insane with that in the corresponding area from a series of brains from persons dying in London hospitals (Guy's and London), and found that among the hospital cases this prevalence of the insane type (if I may term it so), was much less marked.

Hitherto, however, my observations had been confined to a very limited area of the ascending frontal convolution—that which controls the muscles of the foot and ankle. Here I record a more extended study of the Rolandic area, dealing with :

(1) Its configuration.

(2) The micrometry of its cortex, in order to ascertain whether, as

Bolton showed in the case of the visual and prefrontal areas, there was a deficiency or atrophy in the depth of any of the laminæ in different forms of insanity.

(3) The form of Betz cell here described, to ascertain whether its prevalence is maintained in the areas controlling the muscles of the remaining part of the lower extremities, of the upper extremities, and of the face.

(4) An attempt has been made to correlate differences in the internal structure of the Betz cells with symptoms.

(5) A theory is advanced as to the significance of the change seen in the pathology of insanity.

Method.—In every case a drawing was made of the Rolandic area, and the site of the portions selected for study were marked out in this drawing. The tissue was fixed in absolute alcohol, passed through chloroform, embedded in paraffin, all in the course of three or four days. Sections, including the cortex of both lips of the area, stained in Unna's polychrome blue, were drawn on a slightly enlarged scale, on which were marked the position of the principal Betz cells as seen under a low power, and also the region in which a definite granule layer could be detected. Drawings of the different types or of prevailing types of the Betz cells were made in the majority of cases by the aid of a "Zeiss camera lucida," all to the same scale (*viz.*, objective D, ocular 6). Campbell, in his monograph, calls attention to the valuable aid in the study of these cells and their changes this proceeding yields, and I can confirm his remarks. It is only by comparing a series of such drawings one with another that one is able at all satisfactorily to appreciate the enormous difference in the size of the Betz cells in different cases and to classify the changes seen.

PART I.

1. *The Configuration of the Rolandic Area.*

Quain states that this fissure is very rarely interrupted in its course, although on separating its lips it may sometimes be seen that there is a slight tendency to the appearance of an annectant gyrus about the level of the superior genu, and it is here that the interruption is liable to occur. Ebersteller met with this interruption twice in 200 cases, in both unilateral. Retsius not once in a hundred. A. W. Campbell, in thirteen instances in 1,400 brains examined, and R. Wagner in the brain of Prof. Fuchs.

I append some figures as to the mode of beginning and ending of the fissure of Rolando in cases of insanity, and concerning the frequency of an annectant gyrus.

The number dealt with is too small to attempt to draw therefrom any decided conclusions, so I merely give the tables, and refer to one or two points which they show: First, as regards the upper end of the

fissure, it fell short of the vertex in 37 *per cent.* of all cases, least often in imbeciles. It cuts the vertex in 47 *per cent.* most frequently in Class I⁽¹⁾, least frequently in Class II. It extended from half to an inch on the mesial aspect in 16 *per cent.* most frequently in Class II, least frequently in Class I.

In three males, one of each class, and one female of Class III, instead of passing as usual obliquely backwards on the mesial aspect, it ran vertically downwards, and in the case of a male of Class II it passed vertically down for upwards of an inch. A piece of tissue was cut out, including the cortex of both sides, near its extremity; the depth of the fissure here was 7 mm. Examination of sections showed that the cortex on each side was of equal width; on both sides were equally large and numerous Betz cells, and on both sides the granule layer was very indistinct; in fact the cortex on both sides was of precentral type.

Cunningham states that in 60 *per cent.* the fissure incises the upper border of the hemisphere, and appears on the inner aspect. In about 20 *per cent.* it only just reaches the upper margin, and in 20 *per cent.* it falls short by an appreciable distance.

Presumably his figures are based on data made from the general population, and as under the head of cutting the vertex, I have included those cases in which it did not pass for half an inch on the mesial aspect, probably there is no great discrepancy in our results. As regards the lower end, it stopped short of the Sylvian fissure in 86 *per cent.* on the right and 73 *per cent.* on the left, sometimes for upwards of an inch. The lower end occasionally forms an inverted T-shaped bifurcation, lying obliquely with its anterior half of the cross-piece on a higher plane than the posterior. In these circumstances I found that the posterior half represented the true termination of the fissure of Rolando, judging by the types of cortex found on each side of the limb. The lower end terminated, as described by Quain, in half the cases on the right, in less than half, 43 *per cent.*, on the left. According to Cunningham, in about 19 *per cent.* the lower end forms a connection with the Sylvian fissure by means of the sub-central sulcus. In my cases this was found in 13.5 *per cent.* on the right and 27 *per cent.* on the left, twice as often on the left as on the right. It may be pointed out that the normal arrangement, according to Quain, was very considerably less frequently met with in the imbeciles compared with Class I, but most frequently, not in this class but in Class II.

Annectant Gyrus at the Buttress.

I have already referred to the occurrence of an annectant convolution at the site of the buttress, a condition which Cunningham describes as of extreme rarity, but which Campbell found in 15 out of 1400 brains examined by him, or roughly in 1 *per cent.* of all his cases. It was found

in 8 males and 5 females, in 7 instances on the right side only, in 5 on the left, and once on both sides. Both Cunningham and Campbell are referring to a complete annectant convolution, that is one which rises to the surface and is visible without any manipulation of the brain.

Table showing the occurrence of a Partial (p) or Complete (c) Annectant Convolution at the Butress in 152 Cases of Insanity.

	Total number of cases examined, divided into three classes.	Annectant convolution at buttress.						Percentage incidence in each class and sex.
		Complete (c).	Hidden (p).	Total.	Side on which found.			
					Right.	Left.	Both.	
Class I	Males . 21	—	—	—	—	—	—	
	Females . 52	—	5	5	1	2	2	
	Total . 73	—	5	5	1	2	2	
Class II	Males . 18	1	—	1	1	—	—	
	Females . 24	—	4	4	1	2	1	
	Total . 42	1	4	5	2	2	1	
Class III	Males . 17	1	2	3	—	3	—	
	Females . 20	1	1	2	1	1	—	
	Total . 37	2	3	5	1	4	—	
Grand total .		3	12	15	4	8	3	

A hidden or partial annectant, which does not rise completely to the surface, and which is not visible until the lips of the fissure are separated, is a very common occurrence, I have met with it in 12 cases in 152 brains examined, but, as the accompanying table shows, it was, unlike Campbell's cases, more frequently found among women, and most frequently among women of the dementia præcox type and congenitally defective males.

It appears to me that the figures in this section relating to the formation of the fissure of Rolando point to differences between the sexes, and, also, as might perhaps have been expected, they show that

departure from the normal type is more common in Classes II and III than in Class I.

2. *Micrometry.*

In Table A are given summaries of the average measurements of the different layers of the cortex of the Rolandic fissure in its frontal and parietal aspects in the brains of four hospital patients, twenty-nine insane males, and thirty-one insane females. Three measurements were made in each case for the ascending frontal and a like number for the ascending parietal cortex, *viz.*, one obliquely at the lip of the fissure, one midway down, and one at its deepest part which, like the first, was slightly oblique. According to Campbell⁽²⁾ the precentral type of cortex does not extend quite to the floor of the fissure in any part; if so, one of my precentral measurements must be regarded as post-central. However, as Campbell himself very positively asserts (p. 80) that it is the presence of Betz cells which *absolutely stamps* the precentral type, and forms a certain guide to its territorial demarcation, and as these cells almost invariably extend not only down to the level of the floor of the fissure, but for an appreciable distance on to the post-central side in both the leg and arm areas, I have had no hesitation in including this third measurement in my calculations of precentral cortex.

The figures in Table A represent some 6000 measurements. The sites selected for study were three as follows: Upper segment of the fissure above the buttress, from that region the cortex of which is supposed to control movements in the lower extremities; the middle segment below the buttress, from whence movements of the upper extremities are controlled; from the lowest segment, quite near the lower end of the fissure, whence movements of the face and larynx are controlled. Of these sites the first is that which is best adapted for this purpose, as in practically all cases the fissure is straight and the cortex on both sides of it forms a band of uniform thickness until it passes beneath the end of the fissure where it becomes much narrower; whereas in the middle segment the fissure is very deep, frequently irregularly curved, and the cortex of less regular depth so that it is generally necessary to make trial cuts at different levels to obtain a piece suitable for micrometric study, for this reason in this region the portion selected in each case for measurement comes from different parts of the segment, whereas at the leg level there is great uniformity of site in the different cases. At the lowest level the fissure is often so shallow that it may be difficult to get three distinct measurements.

My cases, it will be noted, are divided into three classes: In the first are all cases of acquired insanity; in the second cases of dementia præcox; in the third imbeciles, with and without epilepsy. Two of

these classes call for no comment, but as regards Class II it may be desirable to outline briefly what I mean by dementia præcox, as the meaning which this name carries is still a matter of considerable controversy. I look upon simple dementia præcox as in a sense denoting more a temperament than a disease, including within its scope the inefficients of all kinds, not alone those within asylum walls, all persons who may be supposed to be furnished with a nervous system of deficient durability, liable to break down under comparatively slight stresses. The inevitable stresses that every person has to undergo are to them fraught with danger. Most of them cannot stand the stress of puberty, and of those who can, in the case of women, childbirth offers fresh risks and later on the menopause. Only a proportion of such persons find their way into lunatic asylums, many are able to earn a competent livelihood, or to attend fairly efficiently to their household duties, provided that their circumstances are favourable, some are even, under similar conditions, looked upon as persons above the average ability. But in all, there is what Adolf Meyer terms the "hall-mark of this disorder, *viz.*, a constitutional disposition to meet their difficulties in an inadequate manner." Esquirol's term of "acquired imbecility" describes very well a large number of cases of dementia præcox whom, in default of a knowledge of their past history, it may be impossible to distinguish from imbeciles. The tendency in most cases is to go from bad to worse, slowly or rapidly; although some improve to such a degree that they may be discharged from the asylum as recovered, probably there is in every case a certain degree of permanent mental infirmity left after an attack.

With regard to my classification of the cortical layers I have adopted that which is in most general use, *viz.*, Meynert's :

- (1) External or molecular.
- (2) Layer of small pyramids.
- (3) Layer of large pyramids.
- (4) Granule layer.
- (5) Line of Baillarger.
- (6) Polymorphic, or spindle-cell layer.

Bolton only reckons five, as he regards Meynert's 2 and 3 as one; and as Bolton is our great authority on micrometric studies of the cortex, it is well to have a classification such as Meynert's which can be compared with his.

Dealing first with the cortex as a whole, there are certain points to which I desire to draw attention. In the first place it should be noted that the precentral cortex is invariably wider, and very considerably wider than the post-central, not very seldom twice the width of the latter. This feature, although it can be traced in each individual layer, is mainly due to the increased width of the third and

TABLE A.—Showing the Average Width in Millimetres of each Layer of the Precentral and Post-central Cortex entering into the construction of the Fissure of Rolando in Leg, Arm, and Face Levels in Hospital Cases and Insane. (The figures in percentages show the percentage value of the combined second and third layers and of the sixth layer to similar layers in the hospital cases for males, and of Class I for females; and the percentage value of the total width of cortex in each class to that of the hospital cases for men and to Class I for women.)

	Ascending frontal.					Ascending parietal.								
	1st layer.	and 3rd layers.	4th & 5th layers.	6th layer.	Total width.	Percent- age of total width of each class to hospital.	1st layer.	2nd & 3rd layers.	4th layer.	5th layer.	6th layer.	Total width.	Percent- age of total width of each class to hospital.	
MALES.—Leg.														
Hospital cases	0.277	1.085	0.907	0.725	2.994	100	0.230	0.725	0.223	0.212	0.410	1.800	100	
Class I.	0.275	1.150	0.848	0.707	2.980	100	0.220	0.759	0.289	0.264	0.561	2.093	116	
" II.	0.273	1.027	0.749	0.666	2.715	91	0.254	0.813	0.266	0.241	0.491	2.065	115	
" III.	0.312	1.114	0.847	0.758	3.031	101	0.278	0.838	0.308	0.284	0.558	2.266	126	
		36%		24%				40%			23%			
		39%		24%				42%			31%			
		34%		23%				45%			27%			
		37%		25%				46%			31%			
Arm.														
Hospital cases	0.295	1.052	0.815	0.788	2.950	100	0.252	0.835	0.270	0.278	0.562	2.197	100	
Class I.	0.292	1.108	0.840	0.876	3.116	106	0.260	0.882	0.269	0.232	0.577	2.220	101	
" II.	0.288	1.131	0.760	0.818	2.997	102	0.243	0.859	0.327	0.304	0.563	2.296	104.5	
" III.	0.309	1.117	0.764	0.791	2.981	101	0.271	0.877	0.280	0.270	0.619	2.317	105	
		36%		27%				38%			25%			
		37%		30%				40%			26%			
		39%		28%				39%			26%			
		38%		27%				40%			28%			

MALES (cont.).—Face.													
Hospital cases	0'290	0'915 35.5%	0'705	0'665 25%	2'575	100	0'232	0'710 34%	0'275	0'300	0'563 27%	2'080	100
Class I.	0'281	0'986 38%	0'608	0'805 31%	2'680	104	0'265	0'779 37%	0'300	0'290	0'572 27%	2'206	106
" II.	0'279	0'976 38%	0'683	0'847 33%	2'785	108	0'262	0'843 40%	0'281	0'249	0'550 26%	2'185	105
" III.	0'284	1'025 40%	0'706	0'862 34%	2'877	112	0'260	0'740 36%	0'302	0'281	0'582 27%	2'165	104
FEMALES.—Leg.													
Class I.	0'247	1'007 38%	0'726	0'636 24%	2'616	100	0'212	0'746 37%	0'268	0'237	0'549 27%	2'012	100
" II.	0'239	0'988 38%	0'747	0'752 29%	2'726	104	0'215	0'727 36%	0'250	0'241	0'541 27%	1'974	98
" III.	0'301	1'043 40%	0'763	0'728 28%	2'835	108	0'259	0'792 37%	0'265	0'258	0'492 23%	2'066	97
Arm.													
Class I.	0'252	1'082 36%	0'726	0'937 31%	2'997	100	0'235	0'794 36.5%	0'274	0'260	0'612 28%	2'175	100
" II.	0'273	1'067 35%	0'698	0'792 26%	2'830	94	0'214	0'771 35%	0'261	0'274	0'654 30%	2'174	100
" III.	0'299	1'058 35%	0'697	0'847 28%	2'901	97	0'245	0'780 36%	0'290	0'257	0'541 25%	2'113	97
Face.													
Class I.	0'256	0'964 38%	0'581	0'722 28%	2'523	100	0'226	0'756 36%	0'272	0'242	0'596 28%	2'092	100
" II.	0'266	0'898 35.5%	0'627	0'787 31%	2'578	102	0'226	0'763 36%	0'263	0'264	0'577 27.5%	2'093	100
" III.	0'272	0'883 35%	0'636	0'726 29%	2'517	100	0'245	0'799 34%	0'247	0'242	0'597 28.5%	2'040	97.5

sixth layers in the precentral cortex. The greatest difference (I am now referring to average and not single measurements) I found occurred in the hospital cases where the average for four gave 1.19 mm. in favour of the ascending frontal of the leg area. The least difference was in the face area, as perhaps might be anticipated, inasmuch as here the distinctive features of pre- and post-central cortex are largely absent. In this area the difference was fairly constant and ranged between 0.7 to 0.42 mm.

In the second place the cortex of the Rolandic area is considerably wider than that in either prefrontal or occipital region. It varies a great deal, but an average width in the male in the prefrontal is, for the leg and arm area, 3 mm., in the face area 2.5 or 2.6 mm. In the female 2.8 mm. for leg and arm, and 2.5 mm. for face respectively. It tends to be widest in the middle segment in both lips of the fissure. According to Bolton the width of the prefrontal cortex in a normal male was 1.89 mm., in a female 1.81 mm., and in his series of imbeciles and dementals it varied from 1.78 to 1.38 mm. In the visuo-sensory area he gives it as 1.8 mm., and in the visuo-psychic as 1.86 mm.

Thirdly, the width of the cortex in males is greater than in females. Quain gives the difference as only about 1 *per cent.* in favour of males; in my cases it varied from 0.4 to 12.5 *per cent.* The only exceptions I met with in my averages were once in the leg area in a female of Class II, and twice in the face area; in one of these latter the ascending frontal, and in the other the ascending parietal, in a female of Class I was the wider.

So far as my figures go they show no indication whatever of any diminution in the width of the cortex either of pre- or post-central, in cases of prolonged dementia, or where gross atrophy of the hemisphere is found; nor does age within the limits of my cases appear to have any appreciable effect in this direction.

The cortex in the case of E. D—, Class III, is interesting. In her case her cerebrum was a mere shell with enormously dilated ventricles, and, when the fluid escaped from them, the brain-wall fell in like a burst bladder. The white matter was nowhere more than a quarter to half an inch thick; the entire thickness of cortex in the three areas was as follows:

	Ascending frontal.	Ascending parietal.
Leg area . .	2.510 mm. (2.835 mm.)	1.820 mm. (2.066 mm.)
Arm area . .	2.630 mm. (2.901 mm.)	2.260 mm. (2.113 mm.)
Face area . .	2.680 mm. (2.517 mm.)	2.260 mm. (2.060 mm.)

The figures in brackets give the average width for Class III.

Here there was some thinning in the upper two levels of the ascending frontal, but it was entirely at the expense of the sixth layer. The supra-granular layer throughout was equal to or greater than the average for the group.

	Ascending frontal.				Ascending parietal.			
	Supra-granular.		Sixth layer.		Supra-granular.		Sixth layer.	
	E.D.	Average for Class III.	E.D.	Average for Class III.	E.D.	Average for Class III.	E.D.	Average for Class III.
Leg level .	1'040	1'043	0'440	0'728	0'750	0'792	0'380	0'492
Arm level .	1'070	1'058	0'600	0'847	1'000	0'780	0'450	0'541
Face level .	0'960	0'883	0'650	0'726	0'830	0'709	0'560	0'597

I am inclined to believe that the width of the cortex is an innate character, and not markedly affected in after life, apart from normal development, by prolonged dementia with atrophy of the hemispheres, nor by age. My observations support the contention of J. Cruickshank (*Journal of Mental Science*, January, 1917): "That the atrophy of the brain, which is so common a feature at autopsy in chronic cases of insanity, is due more to the loss of the underlying white than to the loss of the superficial grey matter."

I was struck while examining the Rolandic fissure of a female, æt. 3, an epileptic imbecile, to find that as regards the post-central cortex there was no evidence of any deficiency of width compared with adult cases; and as regards the pre-central very little. The cortex was of infantile type, and, although the different layers could readily be distinguished (except in the case of the second in some parts of the ascending frontal), this was mainly owing to the arrangement of the nuclei of the undeveloped nerve-cells, only the larger of which showed a distinct body, and, although the Betz cells were, generally speaking, smaller, some few were as large as any found in adult cases. The demarcation of cortex from white was facilitated by the large number of nuclei in the latter in comparison with those seen in the cortex. Such a condition suggests, as a corollary to the apparent absence of atrophy of cortex in dementia and old age, that the full width of the cortex is differentiated from the white in preparation for the nerve-cells at a relatively very early stage in life, and by the aid of micrometry we obtain a fairly clear demonstration that the cortical layers are laid down very early—prior to the formation of the sulci; for we invariably find that at the dip of the fissure where the cortex bends round to pass from one side to the other, not only is it much thinner, but this thinning is chiefly at the expense of the inner layers—the zonal layer, indeed, is usually wider here than elsewhere.

This is what happens when a plastic material is bent round at an acute angle, and the inference I draw from these appearances is that the layers were present before the bending necessitated by the presence of sulci took place.

Bolton, in the case of the pre-frontal cortex, found that there was a deficiency in the width of the supra-granular layer in imbeciles and chronic demented; in the former instance he regarded it as an innate

deficiency, and in the latter as due to atrophy, which is in proportion to the degree of dementia. It is this layer, the supra-granular, corresponding to Meynert's second and third, which in Bolton's opinion is concerned with the intellectual operations of the mind. My figures, as I have already mentioned, are not to any extent in accordance with Bolton's conclusions. They show (see Table A) as regards the entire cortex, among males, with one exception in the ascending frontal leg area of dementia præcox, that both in pre- and post-central gyri, it was as wide (once) or wider than that found in the average of the four hospital cases. Among females, that it is usually wider in Class I than in Classes II and III, in this respect agreeing with Bolton's results.

With reference to the individual layers I found among males, with the single exception of the leg area of the precentral in dementia præcox, the supra-granular layer was absolutely and relatively wider in all the insane than in the hospital cases, and comparing the classes one with another, although there is found to be in the leg area a slight relative and absolute deficiency in Classes II and III compared with Class I, as we might expect on Bolton's supposition, such a deficiency is not met with in any other of the regions examined.

In the females comparing the three classes there was no marked difference between them in either the relative or absolute width of the supra-granular layer, but, what difference there was, with the exception of the leg area of the precentral, was in accord with Bolton's results.

The relative width of the supra-granular layer in pre- and post-central gyri was within 1 to 4 *per cent.* the same in all the regions examined, except the leg level in Classes II and III, and here there was a difference of 9 to 11 *per cent.* in favour of the pre-central cortex.

Perhaps the only conclusion we can come to from my figures is that there are considerable differences in the two sexes, not only in the width of the entire cortex, but also in the relative proportion of one layer to another.

PART II.

Some Features in the Minute Structure of the Rolandic Cortex.

The ascending frontal cortex is sharply distinguished from the adjacent ascending parietal cortex by peculiarities of stratification, and also by peculiarities in its elements; both these mainly showing in its upper three-fourths.

The first mentioned consists in an almost complete absence of a definite granule (or stellate) layer. In a large proportion of cases the transition from the precentral to the post-central type of cortex, in the upper two-thirds or three-quarters of the Rolandic area, takes place fairly abruptly just beneath the deepest part of the fissure of Rolando,

as seen on transverse sections, but occasionally a definite granule layer can be seen passing into the precentral cortex, and this can be seen running half, or all the way up the anterior lip of the fissure, or perhaps even passing around the summit and present on the frontal aspect of the precentral; sometimes the layer (or band) ceases, and reappears again a little further on. But in the lowest third or fourth of the fissure of Rolando, where it as a rule is much shallower, this sharp differentiation of the two kinds of cortex ceases, and a granule layer is found both in the precentral and post-central cortex; but, although the band in the former site is quite distinct, it is usually narrower than in the post-central. Unless the granule layer reached a third of the distance from the deeper to the surface end or summit of the precentral cortex in transverse sections, I have not, in the following account, taken it to be abnormal; in my 67 cases it exceeded this limit in 18 (*viz.*, 7 males, or 24 *per cent.*, and 11 females, or 28 *per cent.*), and this occurred usually in the upper level (leg), *viz.*, in 14.

From my figures there appears to be a greater tendency for variation from the normal condition among congenital cases, for whereas among 22 of them (of both sexes) it was noted to be present in the precentral cortex in 8, or 36 *per cent.*, it was only so noted in 10 out of 45 cases of Classes I and II, or 22 *per cent.*

On the other hand, it is rare to find it defective, that is to say, in transverse section it was only once found not to be evident over the whole stretch of the post-central cortex in a case of dementia præcox in a male.

Cell peculiarities.—The presence of very large nerve-cells lying in the inner stripe of Baillarger constitutes its most marked positive characteristic in this upper region. These, the Betz cells, are far and away most numerous in the upper third or fourth of the precentral area, including in this the mesial aspect. But, from the buttress, usually from its upper portion, they rapidly diminish in number, and often none can be detected in the lowermost fourth of the cortex. According to Campbell's estimation, the number of these cells is 25,000, and he gives some figures showing the numbers counted in a series of sections cut at right angles to the fissure of Rolando, taken at intervals of 5 mm., all the way along its course. The total number he counted in this series was 249, of which 189, or nearly 76 *per cent.*, were above the buttress in the upper third of the area; over the remaining two-thirds of the area therefore were only 24 *per cent.* By making long sections of the precentral area from above downwards parallel with its surface, one is able to prepare a diagram showing the precentral cortex from near its upper to near its lower end. Such strips shows very clearly not only the dense aggregation of Betz cells in the uppermost part of the area, but also their position in the cortex at

different parts. They show that Betz cells are by no means confined, or even chiefly confined, to the parietal aspect of the cortex, but extend thickly all over it on the frontal aspect, and also that they often occur in fair number in the buttress. Below this region they rapidly diminish in number, and in the specimens examined none were seen on the frontal aspect. There is, doubtless, much variation in their distribution. Bevan Lewis and Clarke, who were the first, or among the first, to study them closely, stated that in the uppermost portion of the ascending frontal convolution they were situated on the parietal aspect of the convolution, that they rapidly thin out towards the vertex, and are not found on the frontal aspect. This is a statement which, as I have just shown, requires modification. These two authorities stated that in certain places Betz cells were absent, and one of these areas corresponded to the buttress, where Campbell also noted their absence, although he himself figures some in this region, and also gives the number he found in his series of sections taken from one end to the other of the Rolandic area. In my experience they are quite as often as not found here—absolutely typical Betz cells of large size.

As a rule, the cells diminish in size as one passes from an examination of the upper to that of the lower levels. Campbell, who, of course, noted this feature, accounts for it in the same way as did Bevan Lewis, *viz.*, that the farther a nerve-cell has to transmit its energy the larger it is; but he found the small size of the cells in the buttress, the area which he believes controls the muscles c. the trunk, an awkward circumstance to fit in with his theory.

This statement as to the size of the cells is one that only roughly holds good, for quite frequently, in the lowest part of the Rolandic area, that which is supposed to preside over movements of the face and larynx, are found Betz cells as large as any in other parts of the area. Such exceptions militate against the theory of Bevan Lewis, unless we may suppose that these large and solitary forms are, as it were, aberrant cells in alien areas.

Another point I wish to emphasise is the occurrence of Betz cells in the ascending parietal convolution. This I take to be an anomaly, but it is one that occurs frequently.

I have described as Betz cells those of a certain shape, usually not pyramidal, lying in a definite layer of the cortex—the inner stripe of Baillarger—and occurring singly or in clusters of two or three, and, compared to those in their neighbourhood, of very large size. Such cells I have seen not at all seldom to occur in the ascending parietal convolution, usually in the upper part, near the vertex of the brain. Betz himself described them in this situation.

They were found in over 40 *per cent.* of my cases, about equally in the two sexes, and as one, or at most two or three, sections from the

different levels in each case were examined, it is fairly certain that their occurrence in this convolution is understated. The table gives particulars as to which class of case they were most often observed in, and the levels in which they were situated. The circumstance that they were much more commonly noted in imbeciles than in cases of Class I, is in favour of the contention that their presence here is an anomaly. They were most commonly met with, however, not in Class III but in Class II. It may also be observed that in both Classes II and III they were much more frequently noted in the levels corresponding to the arm and face movements than in Class I, where they were usually

Table showing Incidence of Betz Cells in Ascending Parietal Convolution at Different Levels.

	Sex.	Leg.		Arm.		Face.		Totals.	
		No. of cases examined.	No. with Betz cells in A.P.	No. of cases examined.	No. with Betz cells in A.P.	No. of cases examined.	No. with Betz cells in A.P.	No. of cases examined.	No. with Betz cells in A.P.
Class I	M.	13	3	12	—	11	—	13	3 (23%)
	F.	21	6	17	2	20	—	21	6 (29%)
" II	M.	9	4	9	3	9	—	9	5 (55%)
	F.	12	6	12	4	12	2	12	7 (58%)
" III	M.	10	4	10	2	10	3	10	5 (50%)
	F.	11	6	12	1	12	2	12	6 (50%)

only seen in the upper third of the cortex adjacent to the leg level of the ascending frontal, where Betz himself observed them.

If one may ascribe positive results from electrical stimulation of the cortex as due to excitation of these cells, their presence in any number in the ascending parietal cortex may possibly account for the discrepancies in the results obtained by different experimenters working in this field.

The tigroid of the Betz cells.—The most conspicuous and distinctive feature in nerve-cells stained by methylene blue or allied stains, such as Unna's polychrome blue, is the tigroid, and the alterations which this substance undergoes in pathological conditions has been the means of very greatly furthering our knowledge of the pathology of the nervous system. Almost from the first since Nissl described this feature in nerve-cells there has been controversy as to whether it represented a vital constituent of the cell, or was precipitated as such after death. Nissl himself only claimed for it an equivalent value to a vital structure, that is to say, he claimed that in a normal condition it presented a constant pattern, and that the alterations observed in it with abnormal

or morbid conditions were also constant with regard to each morbid change.

Many years ago Held maintained that it did not exist during life as seen in stained nerve-cells, but was precipitated after death by the acid condition of the tissues then set up ; but his statement, on which he founded his belief that dilute acids precipitate and dilute alkalies dissolve it, has been controverted. F. H. Scott (³) asserts that the reason why the tigroid does not stain after the treatment of cells with alkalies, is not because of its disappearance or non-existence as Held thought, but because by the action of alkalies the masked iron contained in tigroid and on which the staining depends is dissolved out.

F. W. Mott upholds Held's view, and adduces as a fact in support of the artefact nature of tigroid that it is not seen in living nerve-cells, unstained, when viewed by dark-ground illumination. That is so ; but unless he can also show that dead nerve-cells under similar conditions do show tigroid, this fact is no proof of the non-existence of tigroid during life in the form revealed by Nissl's method. If this substance is an artefact, it is very difficult to account for certain morbid changes seen in nerve-cells ; for example, the acute cell change of Nissl (coagulation necrosis) and central and peripheral chromatolysis. In acute cell change it is easy to detect all stages from that in which the normally bulky blocks of tigroid are beginning to attenuate, through that when, before it entirely disappears, it is represented as very fine threads, up to the final stage, when it has disappeared entirely from view.

In central chromatolysis how comes it that with a *post-mortem* precipitation the peripheral blocks of tigroid are apparently unaffected, whilst in the centre of the cell body they have disappeared or exist only as fine grains ?

It is almost inconceivable that invariably in certain morbid conditions a dying cell should assume such distinctive features as seen in the examples quoted.

There is, on the other hand, great uniformity of opinion as to the nature, derivation, and function of the tigroid.

It is a nucleo-protein compound containing organic phosphorus and masked iron, derived from the nucleus of germinating cells, and it is generally considered to represent stores of latent energy. Experiments all tend to show that under prolonged stimulation tigroid is used up and disappears, so that the cell body has a pale aspect. In the cells of the aged it is reduced in quantity, so that the tendency is for them to appear pale. On the other hand, apparently, cells in which energy has accumulated show an increase in the size of the tigroid blocks and in its amount, so that they stain very deeply, and have been termed by Nissl "pyknomorphic."

Betz Cells of "Réaction à Distance" or "Axonal" Type.

The correlation of diminished energy and rapid fatigue with cells lacking in tigroid substance is reasonable, and, moreover, absence of initiative may well be associated also with such cells. We all as we grow older experience how difficult it becomes to initiate—to form new habits. We may be able to do quite a respectable amount of routine work, work we have been accustomed to, but the head of energy needed to force new nervous paths is lacking, and hence cells which have a deficiency in the raw material of energy may well be correlated with this mental defect.

Perhaps three of the most characteristic features in a case of dementia præcox are loss of energy, easy fatiguability, and absence of initiative, and, as I have shown elsewhere, a large proportion of all such cases show a great preponderance of a form of Betz cell which we have reason for supposing to be in a condition to satisfy these requirements.

Whether my assumption that the condition is due to an innate defect, in the form of an arrest of development, or whether in some cases, as Mott argues, it may be due to defective thyroid secretion, or whether both these factors come into play, does not alter the fact that this form of cell characterises such a large proportion of cases of dementia præcox. I have very little doubt in my mind that, whether the cells are innately defective or not, a vicious circle is established, and deficiency or perversion of the internal secretion soon hastens the stages towards the complete disappearance of the tigroid. But even more generally speaking, and not confining oneself to one form of mental disorder, it appears to me very probable that the brains of the insane are all characterised by an undue proportion of this form of cell which is most prominently brought to our notice among the giant cells of Betz, and as these only occur in certain limited regions, are very conspicuous objects, and only amount altogether to some thousands (Campbell estimates them at 25,000), the proportion of the affected ones can be calculated with a fair degree of accuracy; whereas, although similar changes may be present in the smaller nerve-cells, they are not so readily seen, and as these number many millions we cannot estimate their proportion with any approach to accuracy, except by very laborious investigation in each case.

The type I am referring to resembles very closely that known as "réaction à distance" (Marinesco) or more shortly the "axonal" form as Adolf Meyer termed it, and I believe the failure to recognise the invariable presence of this type in varying proportions in the brains of the insane has given rise to much misconception. One frequently meets with descriptions of pathological changes in cases of insanity where it is figured and described as the result of injury to axons; but

it is rare that we can trace any sign of this, and the fact that the change is found in such a large number of cells, scattered all over the ascending frontal region in so great a proportion of all forms of insanity, militates strongly against the presumption that it is the result of injury to axons. At all events, unless one is in a position to demonstrate such injury, I do not think one is justified in invoking it as a cause.

The type is met with in the brains of those who do not happen to die in an asylum among the general population, but in fewer numbers. This is what might be anticipated.

It is most common among cases of dementia præcox, and much more so in females than in males, then follow epileptic imbeciles, imbeciles without epilepsy and cases of acquired insanity, and general paralytics in whom it occurs least frequently.

In all these classes it predominates in females, as I found also among my series of hospital cases examined two years ago.

Dealing now with certain points arising from the cases which form the subject of this paper, the number of persons in each class in which 50 *per cent.* or more of the cells were of axonal type is 2 in Class I, 11 in Class II, and 8 in Class III. In the table adjoining the number of such is shown in the leg and arm areas, and occasionally in the face area, but in the latter region very often no undoubted Betz cells are seen, and if present there are too few to calculate percentages with any pretence to accuracy. The results which are given for this area refer to the cells counted in several sections, whereas in the other levels, with few exceptions to be mentioned later, the numbers refer to cells counted in one or at most two sections.

	Leg.	Arm.	Face.
Class I: Males . .	1 in 10 (10%)	1 in 6 (17%)	1 in 5 (20%)
Females . .	1 in 10 (10%)	2 in 7 (28%)	—
„ II: Males . .	4 in 9 (44%)	5 in 9 (55%)	—
Females . .	7 in 10 (70%)	7 in 10 (70%)	6 in 7 (85%)
„ III: Males . .	2 in 10 (20%)	2 in 9 (22%)	—
Females . .	6 in 10 (60%)	4 in 9 (44%)	—

None of the four hospital cases showed a percentage of 50.

In a series of insane persons examined in 1916 in which sections were taken from a similar position in the leg area to those above, and in which micrometric measurements of the ascending frontal and ascending parietal were made, but which I discarded for micrometric purposes, I found as regards the Betz cells showing an axonal type in Class I, males, 5 in 10, or 50 *per cent.*; females, 4 in 9, or 44 *per cent.* In Class II, males, 2 in 6, or 33 *per cent.*; females, 9 in 9, or

100 *per cent.* In Class III there were no males examined; females, 5 in 7, or 70 *per cent.* For a number of years I have been in the habit of estimating the percentage of these cells in the cortex at the summit of the ascending frontal including the paracentral convolution, and the results obtained in this larger series are substantially the same, so that I can speak with much confidence on this matter of the prevalence and preponderance of this type of cell in the insane⁽⁴⁾.

In 1914 I was able to examine, through the kindness of Dr. Turnbull, of the London Hospital, and Dr. French, of Guy's Hospital, pieces of cortex from the summit of the ascending frontal and paracentral of 50 hospital cases—30 males and 20 females. In this series only 2 of the males, 7 *per cent.*, and 3 of the females, or 15 *per cent.*, showed a preponderance of the axonal type of Betz cell.

In the controls, 30 males and 20 females from among the insane, the percentages were respectively 36 and 45.

I find that in sections showing a fair number (twenty or thirty) of Betz cells, as is the case in almost all taken in the leg level, an estimation of the percentage of this form in one section gives a rough idea of that which is found, where a number of sections over the same area are examined. In some of my cases, especially when the number of axonal forms has been about 50 *per cent.* or just over, I have examined a series of sections taken sufficiently far from each other to ensure not getting the same cell in more than one section, and I get fairly concordant results.

This widely occurring and even distribution of the affected cells, which is not confined to any one area or level, is opposed to the idea that the form in question is due to injury or disease of axons. And the fact that we are able to give a rough estimate of the proportion of these cells obtaining throughout the whole Rolandic area, from the examination of two or three sections, is one of very great practical importance—in many cases, I contend, enabling one to give a positive statement of one of the factors concerned in the production of the insanity; whereas, however true the claims for the results of micrometry may prove, they are only applicable to averages and not to any one particular case.

With regard to the correlation of the amount of tigroid and motor activity, I believe it is possible (but only very roughly) to correlate the presence of abundant tigroid, especially in the Betz cells, with excess of voluntary motor action during life, that is to say, in those cases, however chronic and demented, who continue to show great motor activity, one usually finds abundant tigroid in the Betz cells; they are in what Nissl termed a pyknomorphic condition.

But the converse to this generalisation is less readily established: cases in which after death no tigroid is found in the Betz cells, are often

characterised by excess of motor activity up to quite a short time before death.

I suspect that to a certain extent it is a question of the capacity of the organism to replace expended tigroid, which determines whether or not we find it in the cells. To a certain extent it may be due to the fact that we are dealing with only one of the three levels into which it is customary to divide the nervous system—so that it is possible that although the cells of one level are defective in this substance it does not follow that those of other levels are.

Conclusions.

I. Anomalies in the form of the Rolandic fissure, and in the arrangement or architecture of its cortex, occur more frequently among the insane, especially among the dementia præcox class and imbeciles, than in normal individuals.

II. There appear to be distinctive characters in the two sexes.

III. As regards a micrometric study of this region, the figures also indicate sexual differences in the width of the laminæ, in which case it would not be legitimate to mix together male and female cases in micrometric studies. They fail, so far as I can see, to afford any clue towards a solution of the problem of the pathology of insanity. It would appear from them that the width of the cortex and its individual layers in both pre- and post-central lobes is an innate feature, not markedly affected by the forms of insanity, nor the degree of dementia and wasting of the hemispheres, nor by advancing age.

IV. A study of the Betz cells is of very real assistance in this matter. The undue proportion of the axonal type in the insane enables one to catch a glimpse of the anatomical basis, so far as the brain is concerned, in a large number of cases. I submit that this type of cell is one of defective structure, and probably of deficient durability; and, moreover, that the evidence is in favour of its being an innate defect, due to arrested development.

At all events, whether it is so or not, makes but little difference to its practical significance, as the morbid influence of perverted metabolism, to which the change in the cell has been ascribed, is one which probably comes into action early in the life of the individual. I regard the presence of this type in more or less numbers as a rough index of the stability of the brain; other things being equal, a brain with a high percentage will more readily break down than one with a low percentage.

According to this criterion the brain of the precocious dement is the most unstable of all, and relatively more unstable in females than in males, and I hold that this is in accordance with clinical experience.

The brain of a congenitally defective person, though on the average

less unstable, may be more defective than that of a case of dementia præcox.

I have taken as a standard an arbitrary number, merely for convenience in contrasting different cases and classes; according to this standard those showing 50 *per cent.* or more of this type are regarded as positive, and those with a lower percentage as negative.

My observations on this type of cell in a very large number of cases show that it is much more prevalent among females than males in sane persons and all classes of the insane.

DISCUSSION.

The PRESIDENT said he was sure all present had listened with great interest to Dr. Turner's paper. Dr. Turner had given the Association, once more, evidence of his extraordinarily industrious labour, and the minute care with which he carried out his researches. He was not sure that this was a paper which lent itself much to discussion in the ordinary way at a meeting; it was rather one for leisured study and assimilation afterwards. Still, if any member felt inclined to discuss any points with which the paper dealt, he would be glad to hear comments.

Lieut.-Col. Sir ROBERT ARMSTRONG-JONES said that lest it should be thought, in the absence of discussion, that there was not sufficient recognition of the paper just contributed, he would like to make a few comments. The paper to which members had just listened was an extremely valuable piece of work, and Dr. Turner had certainly stuck to his text. He, the speaker, did hope that the author would have shown an inclination to wander over the other portions of the cortex, although his paper was entitled "Observations on the Rolandic Area in a Series of Cases of Insanity." He thought Dr. Turner had divided this series of cases broadly into two divisions, the qualitative and the quantitative, and he had limited himself to what might be called quantitative insanity. In the qualitative type of insanity the Rolandic area was not affected, as the author showed to be the case in this series. The paper was a difficult one to discuss, because it was the statement of a fact in anatomy; but in relation to the purely anatomical side there was also the psychological, or what might be termed the philosophical aspect, *vis.*, the kind of relationship which the brain bore to the mind, and the effect of the war had been to make thinkers upon these topics change their views, to some extent, at any rate, in regard to this relationship. It was well known, before the war, that materialistic views largely held the field, but now, once more, the prevailing view was being directed to a psycho-physical parallelism, with the great domination of the psychic. One saw, in almost every issue of *The Lancet*, references to what was termed the "threshold of consciousness"; the great thing in treatment was to be the raising of the "threshold of consciousness." Of course, his hearers had all been doing that from the first moment they qualified; it only meant the importance of making it more easy to impress the personality of the medical man upon his patient. He did not think, speaking generally, the appearance of the cortex could be taken as in any way indicating the presence of insanity, except from the quantitative side, *i. e.*, it could only indicate the amount of dementia. He passed round for inspection some photographs which were taken by Dr. J. S. Bolton, at Claybury Asylum, showing the appearance of the hemisphere in different types of insanity. A large number of these observations by Bolton also referred to quantitative insanity, and, therefore, to that portion of the cortex which was connected with the outgoing effect of volitions, *vis.*, the Rolandic area. He had preserved photographs of the two hemispheres of the brain upon the same plate, in order to show that there was rarely actual identity between the convolutions of the two hemispheres, and he submitted these pictures as an addendum to Dr. Turner's paper. The pictures the author showed were very instructive, but he could not help thinking that Dr. Turner laid too much stress upon the Betz cells. The appearance of those Betz cells in the pictures seemed to be more in harmony with the last picture put upon the screen and showing the toxic effects of hypo-thyroidism, and

dementia præcox may be due to a definite toxin in the brain affecting secondarily the Betz cells and not primarily to a degeneration of these cells themselves. He was much more inclined to regard dementia præcox as the result of some hitherto undiscovered toxin acting upon the whole of the cortical cells, but of which the changes in the Betz cells were only one feature. He remembered at one of the meetings of the Association, when the pathology of general paralysis was believed to be primarily an affection of, and entirely limited to, the tangential and molecular layer of the brain, whereas now it was known to be and described as a cortical parenchymatous spirochætosis, and due to the toxin of the *Treponema pallidum*. The view that the cortex as a whole was associated with insanity had much to support it, and it was equivalent to saying that the cortex was the organ of the mind. Bergson went so far as to say that the cerebral cortex was the organ of forgetfulness, and that if it were not for the power of inhibition which the cortex exercised, everything which had been previously experienced would be constantly coming up into consciousness again in a jumble, with the result that there would be confusion and conflict, incoherence and purposeless activity. Dr. Turner had referred to the Rolandic layer as being primarily concerned with conduct, which would be correct if it referred to all out-going acts. He, the speaker, looked upon the cortex as a series of arrival platforms for the field of consciousness, an area in which the material coming in at the platforms was correlated, from the visual area in the neighbourhood of the calcarine fissure, the auditory area in the transverse gyrus of Heschl, the uncinate convolution, and the hippocampal tract for smell and taste, and lastly from that which had been described to-day as the sensorimotor or the Rolandic area. All these had to be taken into consideration in discussing insanity. Except in regard to quantitative insanities, he thought little information about the insanities could be got from a study of the Rolandic area alone. Dr. Turner had also referred to the tigroid bodies, and stating his belief that they were artefacts. Even if that were so, they formed the best indication of pathological change; they furnished the only clue to deterioration of the cells such as could be measured or determined by microscopical observation. The paper dealt in a very able way, with the amentias, with dementia præcox, and also with that third class, *vis.*, imbecility with epilepsy. He would like to hear more about the association of changes in the Betz cells with dementia præcox, because Dr. Turner had not mentioned the synapse, nor had he suggested changes in the synapse that might account for the symptoms. It was known that the nervous currents passed in only one direction—they could not pass in both—and the synapses were membranous barriers or valves interposed between two neurons, and they might be radio-active valves; at any rate, there seemed to be a polarity about their action as in the neuron, and this might cause delay. The clinical picture of dementia præcox was that of a person who understood, whose memory was often good, who realised what was said to him, but who was the subject of a marked hesitation or retardation in responding to questions, and lastly to a failure of the highest mental powers, *viz.*, the reason. There seems to be a delay in the transmission of a nervous impulse across the synapse which does not occur in the cell or the nerve itself. This last-named characteristic could, he thought, be best explained by some general toxic effect due to inefficient or incomplete metabolism, and acting on the Betz cells, but certainly acting upon the synapses and the whole central cortex as well. There appeared to be a non-synaptic network in some of the diffuse ganglionic plexuses of the sympathetic system in the human body, but in the highest vertebrates there were grounds for believing in an intermediary structure between the axons of some neurons and the dendrites of the next. He made these comments and threw out these hints more as an expression of appreciation than in a spirit of criticism. The contribution certainly tended to the speculation as to the actual relationship between mind and matter, and our views were doubtless changing in this respect; there was plainly discernible a reversion to the view which tended to look upon mind and matter as two separate but real entities. He thanked Dr. Turner for his scientific and instructive investigations.

Capt. NORMAN said he would like to intervene in order to very sincerely thank Dr. Turner for his paper. One could very well judge of the enormous amount of work entailed in it. To his mind, it bore out very distinctly what one wanted to see. There had been a tendency to look upon these morbid processes as something quite apart from the brain, but such investigations as that of which this paper was

the record showed conclusively that there existed a definite physical substratum of change. Work along those lines had been hitherto only too limited; there were very few people like Dr. Turner who were willing to give up the necessary time for such inquiries or who had the ability to carry them out satisfactorily, therefore the Association felt greatly indebted to him for the contribution. The record in the paper and the slides exhibited showed the great interest of the researches which Crile had been carrying out to show the fatigue of the emotions, which also was brought about by the physical structural change in the brain. These latter researches were made on the cerebellar cells, but he believed comparison would show that the change was very similar in the cerebral cells. Crile's researches also showed degeneration in the tigroid matter, and it was, to him, exceedingly interesting to find Dr. Turner's elaborate work went to bear out the same idea. He felt, personally, very much indebted to the author.

Dr. TURNER (in reply) said he felt himself to be in accord with much that Sir Robert Armstrong-Jones said. He looked upon those remarks, however, as counsels of perfection. The so-called synapses could only be shown by special methods, very fickle in their action, and not suited for pathological work. The failure to demonstrate synapses did not mean necessarily they were not there; it might simply be that the method had failed to act. But the charm of the other method was its reliability, and the results, whatever might be their value, were consistent. He was in agreement with Sir Robert's remark that the changes noted were only quantitative. For Capt. Norman's remarks he was grateful.

(¹) For connotation of classes see p. 348.—(²) *Histological Studies on Localisation of Cerebral Functions*, Camb. Uni. Press, 1905, p. 28.—(³) "On the Structure, Micro-chemistry, and Development of Nerve-Cells, with Special Reference to their Nuclein Compounds," *Trans. of Canadian Institute*, vol. vi, 1898-99.—(⁴) In 1914 in a paper on the "Biological Conception of Insanity," I stated that, "In dementia præcox it is extremely rarely, if ever, that it (this prevalence of the axonal type) does not occur, and we may say that one can count upon finding it in every case of dementia præcox katatonia. This statement should refer to female cases only, and among them a larger experience shows exceptions."

The Psychoneurotic Temperament and its Reactions to Military Service. By E. FRYER BALLARD, Capt., R.A.M.C.(T.), Registrar, Mental Observation Division, No. 2 Eastern General Hospital.

THE term temperament is used in this paper to denote the sum total of inherent emotional potentialities and kinetic tendencies peculiar to the individual. A person's tendencies to action and reaction, his outlook upon life, and his liability to mental and nervous disorder, are in a large measure determined by the temperament with which he is born. Character, in the usual sense of the term, and personality, at any given time, are the resultant of temperament and environment in its widest sense, past and present, and previous reactions thereto, and are varying quantities. Temperament, although susceptible of modification by external influences, cannot be changed fundamentally in type.

In what degree temperaments are dependant upon metabolism or purely psychical characters need not be discussed here. All abnormal temperaments shade off by imperceptible gradations from individual to individual, and it may be in the same individual at different times

into the normal, that is to say, that although specific abnormal temperaments are fairly clearly defined one from the other, there is no abrupt line of demarcation between the abnormal and the normal.

From the alienists' point of view, certain clinical abnormalities of temperament indicate a liability on the part of their subjects in excess of that possessed by normal people, to attacks of certain special psychoses and psychoneuroses. It is well-nigh impossible to draw a line of demarcation between the temperament and an attenuated form of the psychosis or psychoneurosis to which the temperament is specially susceptible. Just as there are gradations between the normal and abnormal in temperament, so are there gradations between the abnormal temperament and the psychosis.

In view of the above considerations it will be readily seen that apparently normal persons may under adverse conditions develop attacks of psychoses, etc., which implies that, temporarily at any rate, such persons have acquired the relatively greater liability to the psychosis which is involved in the abnormal temperament. In a word, it is probable that, psychologically, abnormal temperaments differ from normal in the *degree* of functioning of certain natural mental and emotional activities.

Combinations of temperaments are common, but for practical purposes it is desirable to recognise the following varieties:-

- (1) The hysterical.
- (2) The psychasthenic.
- (3) The epileptic.
- (4) The paranoiacal.
- (5) The manic-depressive.
- (6) The dementia præcox type.

These six abnormal temperaments fall naturally into two classes.

The first class, in which hyperæsthesia and a tendency to excessive reaction to external stimuli are prominent features, includes the temperaments associated with the psychoneuroses, hysteria, psychasthenia, and epilepsy.

The second class includes the temperaments associated with the psychoses paranoia, manic-depressive insanity, and dementia præcox—in which such hyperæsthesia is absent. In this paper it is proposed to discuss only Class I.

THE PSYCHONEUROTIC DIATHESIS.

The above term is used here to embrace the hysterical, psychasthenic, and epileptic temperaments.

In cases of psychoneurosis it is no easy matter to determine exactly to which individual syndrome particular symptoms belong.

A special exacerbation of symptoms of fear type occurring in psychoneurotics has been elevated into a fourth syndrome under the name of the anxiety neurosis.

The present writer is accustomed to classify the symptoms of the psychoneuroses and the anxiety neurosis roughly on theoretical psychological grounds; and has found such a scheme valuable in the treatment and disposal of soldiers so affected.

(1) Symptoms which are disguised fulfilments of suppressed instinctive complexes, and are not accompanied by the affective tones of such complexes—are hysterical.

These would include anæsthesias, paralyses, deafness, dumbness, amnesia, and some cases of stupor, automatism, and inco-ordination in movement.

(2) Symptoms which are partially disguised expressions of such complexes, and are accompanied by unpleasant affective tones not amounting to emotions—are psychasthenic. These would include coarse tremors, stammering, localised sweating, palpitation, irrepressible ideas, impulses and phobias, general nervousness and hyperæsthesia to external and internal impressions (the latter being associated with visceral neuroses).

(3) Symptoms which are undisguised expressions of the instinctive state and are accompanied by an acute tone of fear (*i.e.*, those in which suppression has failed) come under the heading of the anxiety neurosis.

Such symptoms are fine tremors, generalised sweating, somatic apprehension, agitation, feelings of impending death, elevated upper eyelids, dilated pupils, palpitation; and all the manifestations of fear, ranging from acute anxiety to terror.

(4) Fits beginning in early life, accompanied by the specialised traits of the epileptic temperament (*vide infra*), and associated with some degree of mental hebetude—constitute epilepsy. Fits that begin after childhood (apart from organic cerebral lesion), often called psychogenetic, and, therefore, not associated with the specialised epileptic temperament and weak-mindedness, are hysterical (*i.e.*, explosive results of over suppression), the only essential difference being one of the chronological incidence of the fits and the results of this. Equivalents of stupor, malaise with confusion, delirium, and other dissociations of consciousness, are not peculiar to epilepsy, but occur in the other neuroses, and are frequently hysterical, the clinical differences again being due to the same factors as in the case of fits.

(5) Vertigo, headache, insomnia, vivid dreams, momentary confusion varying from transitory loss of attention to *petit mal*, are found frequently in all the psychoneuroses.

In the next place it is necessary to describe briefly the temperaments especially susceptible to the above symptoms.

(A) *The Hysterical Temperament.*

Perhaps it may be said in passing that the present writer regards a hyperexcitability of the instincts as one of the main factors in the production of this temperament. Its subjects are emotional suggestible dreamers. They tend to react excessively to stimuli arising from within or without. Affective hyperæsthesia is well marked. They are easily moved to laughter, anger, or tears by trifling incidents, and their emotions are essentially evanescent. Although self-centred and sensitive, their auto-criticism is poor, and their power of accurate introspection defective.

Their tendency to excessive reaction to stimuli (due to affective hyperæsthesia) results in an habitual impulse to banish from their minds (*i.e.*, suppress into the subconscious) the results of stimuli productive of conflict between instinctive desire and environment, and hence unpleasant emotions. This process of suppression becomes a well-marked mental habit.

Hysterical persons, therefore, fail to face and grapple with incidents likely to result in such conflicts (*i.e.*, unpleasant incidents), but promptly suppress instead. Consequently, they are occasionally capable in adverse circumstances of rising transitorily above their environment, and of acting with decision, promptness, and even heroism, but in an impulsive, extreme, and ill-considered fashion. Whether they fail to suppress and therefore act in accordance with their over-excitability instincts, or suppress and act in opposition thereto, their conduct is always coloured by this explosiveness. If they suppress their tendency to instinctive conduct often or long enough they develop episodes.

Hysterics have a craving for sympathy. They like to think they are misunderstood, and to play the aggrieved martyr, if they do not receive the meed of mollicoddling they imagine they deserve. Opposition results in outbursts of emotion, or episodes of somatic type, or fits, dissociated consciousness, wandering, etc., just as other forms of stress do in these cases. They are also more liable than normal persons to psychasthenia, anxiety neurosis, and other neurotic symptoms.

The mechanism of the production of hysterical episodes has been discussed elsewhere.

(B) *The Psychasthenic Temperament.*

Under this heading are included the neurasthenic and the anxiety temperaments. Like hysterics, persons of psychasthenic temperament are hypersensitive and manifest well-marked affective hyperæsthesia, but the results are different in the two cases. Although prone when

taken off their guard to act instinctively and impulsively in response to stimuli, psychasthenics for the most part consider the stimuli, face their conflicts—often over-estimating their unpleasantness—but realising that their tendencies to undue reaction must not be allowed play in order to dissipate the keen affective tones to which the stimuli have given rise, they suppress their tendency to instinctive reaction.

Whereas, therefore, the hysteric usually takes the line of least resistance in conduct, the psychasthenic acts according to his judgment, paying the penalty of instinctive suppression and voluntary conduct by getting disturbances of his coenesthesia—unpleasant visceral sensations and functional disorders, irrepressible ideas, phobias, etc. The hysteric suppresses the total resultant of unpleasant stimuli and if circumstances permit acts instinctively; the psychasthenic suppresses this very tendency to instinctive action.

If circumstances do not permit the former's instinctive action, he eventually develops some hysterical episode. If the latter (the psychasthenic) owing to the strength of the stimuli, cannot any longer bring himself to react according to his judgment, *e.g.*, when he can no longer bear the affective results of stimuli, and his own previous suppression of tendency to instinctive reaction, he breaks, and develops the anxiety neurosis.

Psychasthenics when well (*i.e.*, free from anxiety neurosis) are capable of rapid decision and excellent execution. They are often intellectual, active, energetic, and hard-working. They are apt to be of a serious vein, although frequently wearing a mask of light cynicism. Their judgment is remarkably accurate as regards others, and, as they are introspective, sound as regards themselves once they have learnt themselves. They are born "worries," irritable, impatient, and explosive, anticipating and exaggerating troubles, usually to surmount them satisfactorily when they come to pass; but when of mature years they become philosophers. Occasionally they are self-deprecatory until they learn life. Work is their forte, worry their undoing.

Once the anxiety neurosis has become established in these people, even after their recovery, they are never capable of quite the same resistance to the jars and buffets of fate. They remain good workers, but any slight stimulus associated with the exciting cause of their breakdown invariably tends to bring about a return of the anxiety neurosis. Thus a psychasthenic after such an attack is permanently broken so far as some special circumstances are concerned, but quite capable of grappling with dissimilar stimuli and environments.

(c) *The Epileptic Temperament.*

The chief features of this temperament as seen in chronic epileptics, *i.e.*, persons who have suffered from fits, with or without remissions, from early life, are as follows :

Sensitiveness to external stimuli with a tendency to excessive reaction, irritability, explosiveness, a marked tendency to introspection combined with excellent auto-criticism ; perseverance, energy, and capacity for taking pains ; modified and accompanied by slow mental action, clumsiness in thought and movement, and usually a somewhat limited vocabulary, *i.e.*, symptoms of slight feeble-mindedness. The episodes associated with this temperament are, of course, fits and "equivalents," both tending to be short, sudden, periodical, similar in those of the same type, and more or less guiltless of external cause.

In considering the above three temperaments, one cannot fail to observe the underlying resemblance between them. A likeness probably pointing to a closely-allied if not common basis.

In all, the outstanding features are hyperaesthesia, with an accompanying tendency to excessive reaction to stimuli ; resulting clinically in affective sensitiveness, emotional instability, intolerance of unpleasant affective states, explosiveness of conduct, and, relatively as compared with normal men, lack of adaptability to environment. In all, emotional stress results in abnormal but allied reactions—sometimes superficially diverse clinically, often clinically similar.

With regard to hysteria and psychasthenia, it will be readily seen that the anæsthesias, paralyses, for example, of the former are represented in the latter by parasthesias and coarse tremors, inco-ordination forming the link between paralysis and tremor.

Put briefly, the difference between the episodes of these two temperaments are entirely explicable upon the theory of varying functioning of suppression.

The resemblances between the hysterical psychical episodes and those of epilepsy are equally clear. The early incidence of fits in chronic epileptics probably accounts for the weak-mindedness which colours their temperament and episodes, periodicity resulting from cerebral habit.

The hypothesis suggested is that a common inherent nervous instability lies at the root of all three psychoneuroses ; epilepsy representing the most severe form, hysteria the next, and psychasthenia the nearest approach to the normal. Probably, environment in early life also plays a part in determining which type shall develop from a common psychoneurotic diathesis. This conception brings these psychoneuroses into line with mania, melancholia, melancholic stupor, and mixed conditions, which are regarded as manifestations of an underlying manic-depressive diathesis.

Many considerations point to an inherent abnormality of the vasomotor system playing no inconsiderable part in the ætiology of the psychoneurotic diathesis. Perhaps evidences of this, seen in the episodes of all three psychoneuroses, are low blood-pressure, sweats,

vertigo, fits, flushings, palpitation, feelings of impending death or "all goneness," œdema, blueness of extremities, etc. The question is worthy of further study by neurologists.

The theory of a common basis for the psychoneuroses appears to be borne out by the study of the psychoneurotic symptoms of battle-origin. A very large percentage of battle-syndromes manifest symptoms of hysteria, psychasthenia, epilepsy, and indeterminate intermediate signs which might belong to any of the three. Almost all cases also exhibit some degree of anxiety neurosis. Indeed, one may say that not a few "shell shocks" exhibit each psychoneurosis in the same order and succession as that suggested for the relative severity of the inherent temperaments, *viz.* :

- (1) Loss, or hysterical dissociations of consciousness. (N.B.—Chronic "fitting" epileptics seldom reach the firing line.)
- (2) "Hysterical" fits, paralyses, commonly dumbness.
- (3) Anxiety neurosis.
- (4) Psychasthenia.
- (5) Recovery.

Or in unfavourable cases, we find instead—

- (4) "Hystero-epileptic" fits and equivalents.
- (5) "Epileptic" fits.

Severe cases of war neurosis show mingled symptoms, and many, according to changes of environment, oscillate backwards and forwards between all the syndromes. For example: Send a psychasthenic case back to a reserve unit, let him see a T.M.B.⁽¹⁾, and be marked A, and he will develop a dissociation of consciousness, or fit, or anxiety state. Nearly all cases manifest vertigo, headache, insomnia, terrifying dreams, and momentary loss of power of attention. Chronic "shell-shock" cases who do not have fits almost invariably suffer from "equivalents" practically indistinguishable except in intensity from those of chronic epileptics; these usually take the form of vertigo, malaise, headache, morose depression, and wound-up temper.

The temperamental traits of soldiers suffering from battle-psychoneurosis, who had apparently been normal prior to the war, show a well-marked mingling of those of the three psychoneurotic temperaments.

REACTIONS OF PERSONS OF PSYCHONEUROTIC DIATHESIS TO MILITARY SERVICE.

(A) *The Hysterical Temperament.*

(1) Pure hysterics who do not manifest somatic episodes, fits, or dissociations of consciousness in civil life, should be trained rapidly for the firing line. They sometimes do well for a time, and may occasionally distinguish themselves in fulfilling a previous heroic day-dream.

(2) When such cases develop an episode they should be cured at once near the firing line, by hypnosis or some modification thereof that provides an outlet for the suppressed fear instinct in dream form, and returned to the front line.

(3) A second similar breakdown should be followed by base hospital treatment. If successful, the man should be again sent up.

(4) The supervention of the anxiety neurosis renders it necessary to send the man home to hospital.

(5) Those hysterics who suffer from occasional episodes while training at home should be marked *permanently* for non-fighting service.

(6) Men who are discovered to be markedly unstable emotionally, and who prior to foreign service, suffer from frequent episodes, should be invalided out.

(7) Any combination of anxiety neurosis with hysteria should indicate permanent home service.

(8) Hysteroepilepsy, according to its severity, should mark a man home service or permanently unfit.

(B) *The Psychasthenic Temperament.*

(1) Mild psychasthenics, who have never had an anxiety neurosis, and who only manifest mild stigmata when run down, *e.g.*, stammer, occasional irrepressible ideas, and "worrying," are fit for the firing line.

(2) Psychasthenics who have recovered from an anxiety neurosis *not* due to battle nor to family troubles, separation from sick or penurious relatives (*i.e.*, "the home complex"), are fit for garrison duty abroad.

(3) Those who have had a home complex anxiety neurosis within recent years are only fit for home service.

(4) Psychasthenics who have to go sick with anxiety or exhaustion (true neurasthenic) symptoms frequently in civil life, are useless for the Army.

(5) Soldiers returned from an Expeditionary Force, whether previously psychasthenic or not, who develop anxiety neurosis followed by psychasthenia, as the result of shell-shock, shell-fright, or battle strain, should be marked permanently for home service at hospital, and travelling medical boards should not be allowed to raise their category. My experience leads me to two conclusions in cases of this sort :

(i) That many "shell-shocked" soldiers are lost entirely to the Army by travelling medical boards raising their categories, and thus causing relapses, rendering invaliding necessary in the case of men previously fit to serve at home.

(ii) That the fear or knowledge of such raising of categories by T.M.Bs. prevents many "shell-shock" cases recovering in hospital sufficiently to serve at home or on garrison duty abroad ; and, therefore, such men have to be invalided out.

(c) *The Epileptic Temperament.*

(1) Long-standing epileptics who have only occasional fits, and no, or only mild, equivalents such as slight periodical moroseness, can be sent into the firing line. Apart from shell-shock such cases appear to be little the worse for useful fighting, probably owing to the all-round dulling due to the chronicity of their malady.

(2) Persons of epileptic temperament who have recovered from fits, *i.e.*, in whom there is little dulling of sensibility, are likely to develop severe equivalents and fits at the Front, and should be kept at home.

(3) It will be seen, therefore, that slight mental deterioration in cases of class (1) is no contra-indication for active service.

(4) Epileptics of type (1) who have been "shell-shocked," although they usually recover rapidly from the hysterical part of their resultant hystero-epilepsy, should not be sent to the line again.

(5) Epileptics with severe equivalents, whether they have fits at the time or not, are totally unfit for the Army.

(6) The same is true of persons of epileptic temperament, with or without fits, who show anxiety or psychasthenic symptoms.

(7) The practice, therefore, of discharging all epileptics who "fit" is probably a mistaken one. Many can do excellent work in quiet posts, *e.g.*, in offices, home hospitals, labour companies, at fatigues, or as servants in units.

INDICATIONS FOR TREATMENT OF PSYCHONEUROSES IN MILITARY HOSPITALS.

I. *Civil Life Types, i.e., Cases who have never Served Abroad.*

With very few exceptions these are men who have always suffered from psychoneurotic diathesis, and the question arises—should these cases be kept for prolonged treatment in military hospitals during attempts to cure what is in essence a life-long disability, in which home service has produced an exacerbation?

I think the answer can only be in the negative. They should simply be given rest in hospital while their discharge from the service is being effected, combined with the assurance that the latter is being done. This is quite sufficient in the vast majority of cases to cure the exacerbation, and leave them none the worse for their military experience. If at all disabled for civil life when discharged they should be given a gratuity, not a pension.

A few cases that break down under excessive stress of one sort or another while serving at home recover sufficiently in hospital in a short time merely as the result of the removal of that stress. If it were possible to guarantee permanent home service for these cases

they could continue to serve at home, if only O.Cs. of units would give them suitable work, or if it were possible for M.Os. to recommend transfer from one unit to another with any likelihood of their suggestions being considered.

The exacerbations referred to above, include anxiety states, hysterical episodes, and the more severe stigmata of psychasthenics, as well as mixed states incapacitating a man for work.

II. *Psychoneuroses first appearing after Battle.*

In this class are included the cases due to the circumstances of battle, and giving no history of pre-expeditionary psychoneurotic diathesis.

Some observers seem to think that such cases always lie about their past mental history, denying all symptoms before being "blown up," or what not, for the sake of pensions.

However this may be at Pensions Boards, it is certainly not so when these cases are sent into hospital. Before any question of boarding or even pensions arises the men are carefully examined and their history taken, and the latter is usually true. In fact, if any of the patients' statements have to be taken *cum grano salis*, it is those in which in reply to leading questions they agree that they suffered from some special nervous symptom in civil life. A little experience soon enables one to separate the grain from the chaff, if chaff there be.

With regard to treatment, the question is an entirely different one from that considered under the last section. The present type of patient is suffering (unless he has been the round of military hospitals and been subjected to too much "treatment") from one recent affection with a definite cause, namely, he has functional mental disorder—psychoneurosis, resulting from outrage of his instinct of self-preservation by the stresses of battle. In parenthesis, perhaps, I may say for what it is worth that, although we have had well over five hundred of these cases (*i.e.*, battle types, not necessarily *entirely* due to such cause) through our hands during the last three years, I have never found any clinical distinctions between cases supposed to be due to "commotion" and those supposed to be due to "emotion."

Now, these cases must be treated in hospital, even though the results may be poor in the Army. General considerations have been dealt with above in reference to their disposal.

The first and most important point to be clear about is that it is perfectly useless waste of time to psycho-analyse in the Freudian sense any of these men. We know the complex, if any, suppressed, *viz.*, the fear complex, and to fish for other things merely does harm. Secondly, only certain types should be treated psycho-therapeutically at all (I am not referring to "therapeutic conversation" here). If the case is goin

to be discharged from the Army, tell him so. Patients suffering from hysterical or psychasthenic episodes should be cured, if possible, by some method of suggestion, with or without anæsthesia or hypnotism, or, if you will, by psycho-analysis of buried battle-memories only.

Anxiety types, very recent types (*i.e.*, convoy cases before they have rested and settled down), should have none of these forms of treatment, let alone electricity !

The importance of choosing the right time and type of case for psychical treatment cannot be over-estimated.

III. *Psychoneuroses occurring after Battle in Persons previously Neurotic.*

These cases are often severe. The majority, of course, were formerly quite able to carry on in civil life. Here, again, I would submit that it does not come within the duties of the M.Os. in military hospitals to spend months trying to make these men normal. One should endeavour to cure the battle-factor symptoms ; that is to say, tackle the suppressed fear-complex if there be any suppression ; anxiety neurosis types should be rested, cheered, assured of their discharge, and they will get back, or very near to, their pre-war level.

I have seen some of the results of Freudian psycho-analysis of these cases (usually transferred here because they have become suicidal). One came here with the idea (duly implanted by a psycho-analyst) that he would never be well until he emigrated and left his father ; that his father had always imposed on him ; and he was filled with a mingled grief and anger against a perfectly good and sane parent. He was depressed, anxious, and psychasthenic. He had always been of worrying type. He made a good recovery after a few weeks, his aversion to his father having been removed, and the cause of his symptoms, *viz.*, battle-strain, explained to him.

Another case was similar. He was admitted in a state of weepy depression, and imbued with the notion that marriage was the only thing that would cure him, because he was too fond of his mother. This man had merely been highly strung in civil life. His military history was two years in France, a shell-shock of some sort, a subsequent air raid upon the hospital he was in, and "two stripes up." And his condition was due to incestuous longings for his mother ! After this nonsense was eradicated from his mind he did very well.

Both these men, however, had to be discharged from the service.

A third case was one of mixed anxiety with depression, with functional paresis of the legs. He had had ten months' hospital treatment of every conceivable variety, both psychical and electrical. He was sent here because of increasing depression, which improved here, as did also the paresis, but it was hopeless attempting to do anything for him but reassure him regarding his discharge, and encourage him. He did

not recover here, but had to be transferred with a recommendation for discharge as permanently unfit. This man gave no history of civil life neurosis, nor did he care a button about pensions, being well-off in civil life. He had had well-marked shell-shock, and a long period in the line. His one idea was to escape from hospital and treatment. I have not the least doubt but that he did perfectly well when discharged.

One of the most common varieties of psychoneurotic type being admitted to this hospital at present are boys of psychoneurotic diathesis, who, after a few weeks in the Army, develop some serious mental disturbance. These boys are slightly feeble-minded, but their main disability lies in their inherent inability to cope practically with Army life.

They have usually been shy, solitary boys, who have never played games, never dissipated or indulged in pranks, but have all their lives been timid, seclusive, and introspective. In most cases they have never left home before. They may have had fits in childhood, or some other stigmata, or general ill-health, which prevented their regular attendance at school, or they may have been dunces there. They have in almost all cases been teased and bullied at school and in the Army. Before their minds break down they may appear sullen through stupidity or nervous lack of concentration; they are sometimes regarded as malingerers by incompetent judges, or as cowards because they are nervously unstable.

When admitted to hospital the condition is usually one of severe depression, with or without anxiety and tremor, or, not infrequently, a state of confusion or hysterical dissociation of consciousness. Quite a fair proportion of them terminate in dementia præcox, *i.e.*, chronic lunacy. According to their temperaments they carry on for varying periods in the Army before they break down, and the longer this (to them) period of misery, the more severe the break when it does come.

If a boy at school cannot play games, learn his lessons, mix happily with his fellows, but is a shy game-shirker, a slow scholar in spite of perseverance, and a butt, he cannot be converted into a soldier at the age of 18 by our present methods.

In summing up this brief *précis*, which touches upon so large a subject, I would venture to hazard the following suggestions:

(1) That the psychoneuroses epilepsy, psychasthenia, and hysteria have a common basis, which may be called the psychoneurotic temperament or diathesis, which, in turn, is dependent upon deviations in the degree of activity of natural psychological functions.

(2) That these disorders, whatever their physical basis may be, are for practical purposes mental disorders, and should be treated as such. We cannot yet make an unadaptable man adaptable by neurological methods.

(3) That neurologists and others who have had no civilian experience

of psychological medicine or mental disorders, but have acquired some knowledge of psycho-therapeutics, are not the best persons to treat psychoneuroses or other mental disorders, nor to diagnose them, *e.g.*, many so-called "shell-shocks" turn out to be "mental cases," even in the restricted sense of the latter term ; not a few early dementia præcox cases are labelled "neurasthenia" and quite a number of "? mental" types are discovered to be hysterics.

(4) That psycho-analysis, hypnotism, seclusion, and other forms of psycho-therapeutics are dangerous weapons in the hands of such neurologists.

(5) That it is desirable that there should be established central special Recruiting Boards, to which all mentally doubtful examinees, and those complaining of psychoneurotic, etc., symptoms, should be referred by the ordinary Recruiting Boards before passing such cases into the Army.

(6) That the powers of T.M.Bs. should be curtailed over cases categorised by a special hospital on account of psychoneurotic affections. It is surely bad policy that the opinion of a T.M.B., founded upon a few moments' examination of a man it has never seen before, should over-ride the considered opinion of a specialist who has had the man under observation in all his moods for weeks.

(7) That T.M.Bs., before re-categorising recently joined soldiers complaining of psychoneurotic symptoms or manifesting such, should send them into a special hospital for report.

(¹) Travelling Medical Board.

Moral Sanity. By (the Rev.) J. G. JAMES, D.Litt., M.A.Lond., Southsea.

MANY years ago Mr. H. G. Wells entered the "den of lions" and addressed the "Mind Association," which embraces the most distinguished experts in metaphysics, on "Philosophy." He was well received, however, and doubtless the expert mind was refreshed by the presentation of the philosophy of the "plain man," as expounded by the talented writer. Much more daring and bold is the present writer, who makes no claim to be a specialist in any direction, and does not possess expert learning except, perhaps, in metaphysics, in thus writing on so difficult and technical a subject as sanity for those who have made psycho-therapeutics their life-study. The object of this paper may, at once, be stated to be to express the profoundest admiration and appreciation of the methods of mental specialists, whose principles are in the estimation of the writer so eminently sound as viewed from the standpoint of both philosophy and religion.

The first point to be noticed by way of recognition of the value of

the methods of the psychological school is the position given to psychology, properly so-called, in their procedure. Remarkable developments have taken place of late, and these are rapidly proceeding, in the bifurcation of psychology into epistemology or a branch of metaphysics, on the one hand, and into psychophysics on the other. The now popular experimental psychology seems to be tending in the direction of the biological, if not material, aspect of mental phenomena. We may, perhaps, trace an analogy here to that school of writers on mental science whose investigations resolve themselves into the observation and classification of pathological mental conditions, as though such analysis were the ultimate aim. It is not for the present writer to attempt to criticise this school, but rather to express his sympathy with those writers and practitioners who take a strictly psychological view of the matter and who treat mental disorders as being the phenomena of "mind," as distinguished, though not separate from, the organism which, as we are told, is not necessarily impaired or deteriorated in the case of the insane.

The strictly psychological treatment of mental disease is not precluded from adopting certain forms of experimental psychology, as in the highly-important and invaluable word-reaction method of Jung. In this method, as well as in the application of some of the basic principles laid down by Freud, the school to which reference is being made, lays its chief emphasis, as we understand it, upon the supremacy of mental complexes as distinguished from merely organic processes. This position will largely account for, and is in complete harmony with, the general attitude of the school towards hypnotism, which always more or less reduces the personality to an automatic condition, with all its attendant drawbacks and perils. This does not necessarily, of course, involve a complete ban upon hypnotism in all forms, but it brings the higher processes of consciousness into operation in preference to the secondarily-automatic and the subconscious.

The re-instatement of "Mind" in mental science is to start with a great gain in the interests of moral as well as mental sanity. On this basis it is sought to correct those mental complexes which have become morbid through the failure of normal adjustment or adaptation to the world of reality, or "things as they are." The study of the nature of reality would, of course, take us far beyond the scope of descriptive psychology into the realm of metaphysics proper. It involves the whole question of subjective and objective, immanence and transcendence, the individual and the universe. It is the main problem of metaphysics for all time, but of late years special attention has been given, as in the schools of neo-realism, and the systems of Bergson and Croce and others, to the problem of ultimate, objective, and concrete reality. Failure to reach reality as objective is to reduce all thinking to barren

abstractions, or "an unearthly ballet of bloodless categories." The dreadful curse of "solipsism" which all philosophers are anxious to avert, if they can but fasten it upon others, is akin to that which mental specialists realise that they have to combat in the morbid moods, the subjectivism of the false world of the paranoiac, in which the phantasy of abnormal complexes lead to the perversions and distortions of the subconscious states of mind. The want of proper adjustment to the external world and the conditions of one's lot, together with the defence psychoses which are the phases of the abnormal consciousness, are aspects of that pathological mental condition which correspond to the "heresies" of philosophy and the theologian's "state of sin."

Still the question persists, What is Reality? It is not the external as such and certainly not the merely material. For practical purposes it may be said that the real world is the world as it exists for us all, and objectivity is attested by the collective consciousness. Consequently, we may consider ourselves normal if the world generally acknowledges us to be so. This rough and ready way of viewing the matter is not satisfactory for philosophy, as we shall frankly admit. It is, however, important to note that the right attitude of the spiritual self, and, indeed, the whole personality is that which does not refuse to acknowledge, and does not rebel against reality, in so far as it is presented and apprehended. The immediacy of intuition and even faith through which a man is brought face to face with the truth of things, and by means of which he receives the impact upon his consciousness of that which has the right of appeal, would determine his whole attitude towards reality. That a man should accept his "station and its duties," that his sense of moral values should direct his decisions, that he should free himself from prepossessions, preoccupations, obsessions, and prejudices would all make for moral sanity as it forms the main constituent in mental sanity. It involves the freedom of the mind from self-centred interests and over-subjectivism, which always tend to morbidity in some form or degree. This freedom may be considered as healthy for mind and body, and normal from the standpoint of the physician as well as the theologian.

The nature of reality may require for its due investigation the whole range of philosophy and theology, and if by the line of advance, a spiral line it may be, we may continuously approach or approximate to it, reality in the ultimate is an ideal which is never wholly apprehended. Nevertheless, sanity requires that continuous advance should be made, and if by the right orientation of our souls in that direction we come to feel its impact upon our consciousness, the hurtful and harmful illusions of life in consequence will fall away. The world of men and things around us constitute a challenge for our effort and our service,

and by accepting the challenge with the knowledge that we are doing our duty, and that we do not flinch from or refuse the demands of the hour, our vital activities acquire the proper poise, and our characters become well balanced. Religion asks that life should be lived always with reference to "the spirit of the whole," and it is only in this way that the personality gains its dignity, its power, and its sanity.

Incidentally the question may arise, how far the condition of the world to-day, which almost seems to justify Prince Troubetzkoy's description of it as the "Reign of Nonsense," is due to mental or moral insanity. Are the Teutonic peoples, the ruling caste, and the Kaiser, afflicted with collective paranoia? The great Central Empires are manifestly obsessed by the idea that the whole of the rest of the world, led by England, is through jealousy and spite bent on their destruction. This great fear, amounting at length almost to panic, so far overrides all moral considerations in a race peculiarly subjective, and given to strong, if perverted, idealism, that it feels itself justified in employing any measures, right or wrong, or even barbarous and diabolical, in order to protect itself against a world in arms, and to promote its mission of Kultur. Whether mentally or morally diseased or both, we need not attempt to decide, nor to fix the degree of culpability; but certainly all the phenomena of paranoia seem to be exhibited here, and it cannot be said that these nations are completely sane. The only course of action possible is to administer to the enemies of mankind and the social order the same restraint, once they can be overpowered, that must be imposed upon dangerous maniacs for their own preservation no less than for the protection of the race.

Our main contention is, then, that mental and moral sanity are so closely allied, if not fundamentally the same, that when the totality of the powers and functions of personality are considered, the true and proper relation of vital interest with reality is the final determinant. Reality, as we have seen, may be variously conceived, as the circumstances attending our station and its duties, the challenging objective, or the Supreme Reality, according to the standpoint that we take, mental or moral, philosophical or religious. This being granted, we are in a position to estimate the importance of the methods employed by the psychological school. If, as Dr. Henry Devine affirms⁽¹⁾, "insanity is a matter of personality," with all its delusional phantasy and instability of character and ideals, then the most important treatment is obviously such an analysis as will determine the point at which the rupture with reality took a serious form, with the object of inducing the patient to retrace his steps, so as to begin a process of re-education. This analysis involves a demand for expert knowledge and skill, but the remedy will consist in what we may term "moral suasion." It is a correction, by suggestion or wholesome advice and watchful interest

and care on the part of the physician, in the interests of reality and of the patient himself. Thus it becomes the undoing and the disentangling of the perverted complexes so as to correct the mischief wrought thereby on the subconscious mind. The significance of this most difficult and heroically patient method of treatment lies in the fact that it is precisely what the faithful and intelligent pastor or priest is endeavouring to do in his own way, and along his own distinctive lines. To get at the root of the evil, to induce the sufferer to go back to the beginning and make a fresh start, all this is involved in the theological concept of repentance, which is essentially a change of direction and a change of heart. The same objections are urged against both methods, that it is unwise to "rake up the past;" but the same justification holds good in both cases, that, in the interests of healthy-mindedness, the disease must be properly diagnosed and the evil faced and grappled with, not for the pleasure of the interest in unwholesome experiences, still less that the patient may unduly dwell upon morbid conditions. Still, the need of "confession" of the *faux pas*, and the resolution to face the issues frankly and fully, is a step gained; and wise counsel, kindly suggestion, and a firm handling will accomplish a great deal towards dispelling the fantastic delusions and the perverted views of life which have wrought such havoc in the subconscious region of mind. For the restoration of the mental, and no less the moral, balance it is necessary that every person should gain a just interpretation of the objective forms of existence, and come to accept the values of truth, goodness, and beauty, that are superior to himself, and that he should order his life accordingly. "Hereby shall we know that we are of the truth, and shall assure our heart before Him, whereinsoever our heart condemn us; because God is greater than our heart, and knoweth all things." This is St. John's corrective of the morbid temper and misgiving.

These considerations will meet the last remaining objection that may be raised, that the world owes much of its interest and charm to the creations of the mind, and most of its reforms to visionaries and dreamers who were accounted "mad" in their day, and who certainly did not accept the world as it was. But surely it must be acknowledged that there are objective values in the realm of the moral and the spiritual, and it is these values which are intuited, appreciated, and accepted by those who become the prophets and seers, the poets and philosophers of their time. It is not in their case the triumph of the subjective, but rather the clearer vision and the fuller grasp of the objective standards. They may rise above the actual, the ordinary, and the commonplace, but they do not escape from the real, if they are to stand on solid ground, and accomplish substantial work in the world.

Finally, as the result of these reflections, we may venture to hope that a completer mutual confidence and co-operation may exist, not

only between psychologists and the medical faculty, but also between the medical faculty and the ministry of religion. The distinctive functions of each must be maintained, but a little better knowledge of, and insight into, the respective aims and methods of both would promote far greater mutual regard and respect. The present writer is glad to acknowledge the immense debt, of gratitude he owes to some slight study of the principles of psychotherapy. Let us hope that as each understands a little less imperfectly the work of the other faculty, we shall the better learn how to do our own, and come to realise that we are working hand in hand, each in his own sphere, to restore a more healthy outlook and tone to this sad and insane world.

(¹) "The Pathogenesis of a Delusion," *Journal of Mental Science*, July, 1911.

Occasional Note.

The Annual Meeting.

It is four years since the Association held its Annual Meeting in what may be called a normal manner and under normal conditions. The members who attended the meeting at Norwich in 1914, under the presidency of Dr., now Lieut.-Col., Thomson, cherish very pleasant memories of their three days' sojourn in the interesting old city and its delightful surroundings. None of those who were there, as our new President intimated at the opening of his address, could have anticipated that almost within a few days of their parting a greater catastrophe than has ever been recorded in history was to overwhelm the continent of Europe with all the suddenness and destructiveness of an avalanche. Still less that a war which would extend into its fifth year of duration was awaiting us. Owing to this our annual meetings have been of a purely business character, and all held in London, without any of the usual social amenities which used to form such a pleasant feature on similar previous occasions. Each successive year it was hoped that the war would come to an end, and in this expectation Col. Thomson was asked to continue in office until, with the advent of peace, his successor would have an opportunity of conducting the proceedings on the old lines. This, unfortunately, has not been possible owing to the continuance of the war. But it was felt that it would be unfair to make any further demand on Col. Thomson when he had so generously responded to the wishes of the members in continuing to occupy the chair of office for four years—a position which he filled to the entire satisfaction of the Association at large, and the duties attached to which, notwithstanding the multitude of other matters constantly requiring his attention, far from performing in anything like a perfunctory manner, he dis-

charged with almost unfailing regularity, with ability of a high order, and with an unflagging zeal for the best interests of the Association, which, severally and collectively, owes him a debt of gratitude which the members would find it difficult, if not impossible, to repay.

If we speed the parting we are equally ready to welcome the coming guest, and in their selection of Lieut.-Col. Keay as their chief officer the members of the Association feel that it has been a wise choice on their part, and in his case an honour well deserved. They are confident that the interests of the Association will be safe in his hands, and the recent meeting at Edinburgh may be taken as an index of Col. Keay's capacity for fulfilling some of the most important of his presidential duties, and we have no doubt whatever that, under his ægis, the affairs of the Association will continue to be transacted in the most efficient manner.

The one subject that is uppermost in the mind of every citizen of the Empire is, undeniably, the war. And Bangour Village, having been for the present converted from an asylum for the insane into a war hospital, it was only to be expected that the change would be more or less reflected in the character of the Annual Meeting, which, accordingly, differed from its predecessors in that it was occupied more with military than with purely psychiatric interests. In his thoughtful and deeply interesting Presidential Address Col. Keay took for his subject, "The War and the Burden of Insanity"—a theme which, having had the double advantage of prolonged acquaintance with the many problems of mental science and of more recently acquired experience of the pathological results of war, he was peculiarly qualified to treat. And all those who had the privilege of listening to the address we are sure found it full of absorbing interest, which was none the less for the *souffçon* of humour which gave it extra picquancy and flavour. The points touched upon are of general and wide-spread interest to lay as well as to professional readers. Such are the effects of war, both good and bad—bad, in removing such a vast number of the fittest of the population, while the old and feeble and unfit are carefully preserved; with these latter Col. Keay, with conscious or unconscious humour, classes in the same category "the clergy, the inmates of our asylums and the members of the House of Commons"; bad, again, in the enormous expenditure—an outlay of many millions per day of the nation's wealth in the prosecution of the war, notwithstanding which we have been, as regards trade, "enjoying prosperous times," and the country has been "apparently rolling in money." But this is, as it were, merely a flash in the pan, and the restoration to normal conditions will probably take a generation or more to accomplish. On the other hand, it cannot be denied that in some aspects the war has been productive of substantial good, as, for instance, in quelling what is characterised by Stephen McKenna, as

quoted by Col. Keay, as "a spirit of unrest and lawlessness" which prevailed more or less generally throughout the kingdom, and which included such "hysterical controversies" as those connected with the *status* of the House of Lords, industrial strikes (with these, unfortunately, we are by no means done), the female suffrage campaign, and the Home Rule controversy. It has, moreover, apparently brought about a decrease of serious crime, of pauperism and of insanity. As regards that important question, the early treatment of insanity, the war has undoubtedly been productive of some valuable experience. Now, for the first time, opportunities have been provided for the immediate treatment of recent mental cases without certification, which in ordinary circumstances is, as a rule, only done after a considerable period has elapsed after the first symptoms have manifested themselves. It is too soon as yet, and there is not a sufficient amount of statistical information at hand, to enable us to compute with any accuracy in what proportion of such cases recovery has taken place under early treatment, and without the necessity of sending the patient to an asylum; but the facts, so far as they can be ascertained, are encouraging, and go far to justify the hope that, if the same facilities could be provided in the case of the civil population as exist with respect to military patients, equally favourable results would not be improbable. This was an object dear to the heart of the late Dr. Maudsley, and one which prompted him to the founding of the institution which bears his name. What success will be achieved in time to come, when the hospital will be utilised for the purpose for which it was originally intended, lies still in the lap of the gods. We must only have faith in the future, and trust that Dr. Maudsley's hopes, in which he is joined by not a few, will one day reach their full fruition.

The pressing questions of the day in direct connection with insanity, such as those of child care from the period of pre-natal existence through the successive stages of infancy, childhood, youth and adolescence; the control—if necessary, State control—of alcoholic indulgence and the prevention of syphilis were ably dealt with in the address. And as regards this latter subject, we would like to draw special attention to one paragraph which, to give greater emphasis to the President's fearlessly expressed views, we take leave to reproduce here:

"What is wanted is that the public should be awakened to a realisation of the fact that there is in syphilis rampant in our midst a deadly, contagious, and hereditary disease, a disease which kills a countless number of unborn innocents; which is the cause of mental and bodily decrepitude of a large proportion of our idiots and imbeciles; which in its various manifestations results in life-long incapacity, bodily suffering and mental anguish to numbers of people who, in happier circumstances, would be capable and vigorous citizens. And yet, withal, a disease which is preventable; which, in its earlier stages at

least, and with proper treatment, is curable ; and which, by energetic, resolute, concerted action by the great civilised nations could be stamped out and abolished for ever."

It would be well if this citation could be blazoned in glowing characters throughout the civilised world, amongst all the busy haunts of men.

Although, by what was no doubt mutual consent, there was no annual dinner, members who attended the meeting, and especially those who came from a distance, were received with a liberal hospitality by their Scottish colleagues, in keeping with old Edinburgh traditions of long standing. The President entertained a large number at dinner on the Monday preceding the meeting at the North British Hotel ; and an equally pleasant reunion was provided on Wednesday evening at the Caledonian by Dr. Robertson, who also, along with the kind co-operation of the Chairman and Managers of the Morningside Mental Hospital, gave a most enjoyable "At Home" on Tuesday evening at Craig House to a large number of guests.

The visit to Bangour Village, now the Edinburgh War Hospital, under the command of Col. Keay, on the second day of the meeting was an altogether delightful experience, and partook rather of the nature of a picnic than of a purely scientific meeting, although, as shown in the report, most interesting scientific demonstrations kept the audience, which included not merely members of the profession, quite enthralled. The generous hospitality of the President and Mrs. Keay gave abundant opportunity for genial social intercourse, and, but for a passing shower, the weather was perfect. On the whole the Edinburgh meeting was a complete success, and afforded a restful interlude and unalloyed pleasure to all who were able to attend, and especially to those members of our specialty who had been engaged in work of strenuous, possibly exhausting, character throughout the year.

It may be that in the eyes of the "unco' guid" (or unco' dour) anything in the way of enjoyment may seem to be altogether out of place at a time when the nations are wrung with sorrow, and when there is hardly a family in the kingdom which has not suffered, or is not at present suffering, anxiety, bereavement, and distress, when Death is daily claiming his victims from the stricken homes of our Motherland during the slow progress of this cruel and relentless war. Still, it may not be the best or wisest course for a nation, or for the individuals who compose it, to abandon themselves to unrestrained mourning, to shut out all sunshine from their lives. Would their dead wish it? We take leave to doubt it. Those gallant souls who loved not their lives unto the death, who greeted the unseen with a cheer for love of home and country, they surely would not wish their glorious self-sacrifice and devotion to leave nothing in its wake but enduring sadness and gloom.

If they could speak to us surely they would say—"Be of good cheer. Let not your hearts be troubled; all is well." Under such afflicting circumstances we can, perhaps, the better understand the pertinence of the words which Shakespeare (who knew most of what is in man) put into the mouth of Theseus:

"What revels are in hand? Is there no play
To ease the anguish of a torturing hour?"

It is no easy *rôle* to endure sore trial with a smiling face, and anything which conduces to the lifting of the veil of sadness, to the taking us out of ourselves and our troubles, even for a season, to detaching our minds from corroding grief, must receive our commendation. It serves to mitigate the poignancy of sorrow, and enables us who are left behind—and herein lies its worth and justification—with renewed courage and confidence still to *carry on*.

Part II.—Epitome of Current Literature.

Clinical Neurology and Psychiatry.

Studies on Hysteria. (Review of Neurology and Psychiatry, January, 1918.) Hurst, A. F. and Symns, J. L. M.

A series of researches into the various hysterical stigmata. The writers, as a result of their investigations, support the view of Babinski that these stigmata are produced by unconscious suggestion of the physician in the course of the examination of the patient.

The following investigations were made:

(1) *Pharyngeal anæsthesia*.—The results of the observations are tabulated according to a scale, beginning with 0 (complete anæsthesia), and passing to 7 (maximal reflex making laryngoscopic examination quite impossible). The figures show that pharyngeal sensibility is no more deficient in patients with hysterical symptoms, than in non-hysterical cases, and it varies in a similar manner. When care is taken to avoid suggestion complete pharyngeal anæsthesia is never found. The conclusion is reached that such anæsthesia is not a stigma of hysteria, and that when habitually found it must be produced by involuntary suggestion on the part of the observer.

(2) *Experimental observations on the signs and symptoms of malingering, hysteria, and organic nervous disease*.—Hysterical symptoms being produced by suggestion have the characteristics which the patient believes to belong to the symptom, either from his own knowledge or that suggested by the examination. This view was tested by the examination of twenty-nine medical students who had not yet acquired any clinical knowledge. They were each told to pretend that they had been in a railway accident, and that they were attempting to swindle the railway company by claiming compensation because of paralysis of the right arm and leg, which they alleged had resulted. The symptoms

and signs obtained, as a result of the investigations, correspond to those occurring in patients suffering from hysterical paralysis. Many of the symptoms were produced as the result of leading questions, just as in the suggested symptoms of hysteria. The deep and superficial reflexes were normal.

(3) *Narrow and spiral fields of vision in hysteria, malingering and neurasthenia.*—Hysterical patients do not spontaneously complain of disabilities resulting from a narrow field of vision. But if a narrow field is produced by testing with the perimeter the patient may subsequently complain of considerable inconvenience. The perimeter invariably results in suggesting a narrow visual field however carefully it is used. The writers found also that if the examination was continued after the first field was marked out a spiral field was always obtained identical with that which has hitherto been regarded as a stigma of hysteria. An inward or outward spiral has been produced in the same eye on different days according to the direction in which the white disk of the perimeter is moved. By testing with the finger instead of the perimeter no narrowing of the visual field was found in the "malingerers" described in the previous communication.

(4) *The supposed association of hysterical anæsthesia of the external ear with hysterical deafness.*—In cases of organic deafness anæsthesia was frequently found in a marked degree when suggestion was an element in the physical examination. Similiar results were obtained in hysterical deafness, and the writers conclude from their observations that the supposed association of hysterical anæsthesia of the external ear with hysterical deafness is a complete fallacy, and that anæsthesia is likely to occur in a deaf ear, whether the deafness is organic or hysterical, so long as the individual is sufficiently suggestible and not too well educated.

(5) *A new group of hysterical stigmata.*—If hysterical symptoms are produced by the observer, hysterical stigmata may be multiplied. This point is proved by the invention of three new stigmata which were invariably found when looked for in three suggestible patients. These stigmata were: (1) An outwardly directed spiral field of vision; (2) anæsthesia of the nose; and (3) anæsthesia of the skin round the umbilicus.

H. DEVINE.

The Rapid Cure of Hysterical Symptoms in Soldiers. (*Lancet*, August 3rd, 1918.) Hurst, A. F., and Symms, J. L. M.

Certain hysterical symptoms have seemed to require a prolonged and careful re-education for several weeks to complete the cure. Such symptoms are: The stammer following mutism, tremors—regarded by Babinski as a special neurosis less amenable to psychotherapy than hysterical symptoms—and those contractions which Babinski and Fromont have diagnosed reflex neuroses. From their more recent experience the writers find that prolonged re-education is not necessary in any of these cases, and they now expect recovery within twenty-four hours of commencing treatment. The rapid cure depends on the persistence with the treatment, in spite of the fatigue of the patient and the officer in charge, until the particular symptom is entirely cured, e.g., the mute

soldier who stammers upon the recovery of the voice should not be left until the stammer is also cured.

Relapse is rare if a cure has been obtained within a few weeks of the onset, and the liability to relapse in long-standing cases is much reduced if the patient is given open-air occupation, and kept under observation at the hospital for a few weeks before return to duty.

The essential points in the treatment are simple persuasion and re-education continued with manipulation. The atmosphere of encouragement which should be fostered in the ward before the commencement of active treatment is essential for the cure of the case. H. DEVINE.

The Treatment of Cases of Shell-shock in an Advanced Neurological Centre. (Lancet, August 17th, 1918.) Brown, W.

Observations based on the treatment of between two and three thousand cases of psychoneurosis, the majority of whom were treated within forty-eight hours of their breakdown. Of these cases 70 *per cent.* were able to return to the line after about a fortnight's rest.

The essential factors in the treatment are: (1) Persuasion, whereby the patient is rationally convinced of the true nature of his symptoms; (2) the sthenic emotions of confidence, conviction, and expectation. The symptoms are of emotional origin, and result from the partial failure of repression whereby the emotion is converted into physical innervations. The period of incubation of the symptoms corresponds to the time during which the patient is endeavouring to repress the painful emotional memories. The therapeutic method employed in early cases is one of "abreaction" or "working off" of the painful emotion. The patient is put into a condition of light hypnosis, and the experiences at the time of the shock are again revived in the mind of the patient. This produces a strong emotional reaction, and the patient again "lives through" his terrifying experience. This method brings back the lost function, but not by direct suggestion as in ordinary hypnosis. The patient is told that he will remember all that has happened to him during his sleep and during the gradual waking, the suppressed memories are synthesised to his personality by talking to him of events in his daily life. H. DEVINE.

- (1) *Neurasthenia: The Disorders and Disabilities of Fear. (Lancet, January 26th, 1918.) Mott, F. W.* (2) *The Psychology of Soldiers' Dreams. (Lancet, February 2nd, 1918.) Mott, F. W.*

The phenomena of neurasthenia are the result of continued emotivity and preoccupation, causing a persistent condition of neural excitation. This tendency to emotivity may be inborn or acquired. This emotional excitement often finds its source in dreams of a terrifying nature, especially, of course, in the case of soldiers; obsessional preoccupation is also an important factor. Thus neurasthenia occurs with considerable frequency in men who have never been out of England from the fear of conscription or having been conscripted. In such cases the inborn temperamental disposition plays a considerable rôle. A continued emotivity is also produced by the fear of being boarded out of service, or not being allowed to go to the Front. A mental conflict is thus produced in the

mind between the self-conservative instinct and the moral obligation of duty and patriotism.

The second paper deals more fully with the content and mechanism of the dreams of soldiers.

H. DEVINE.

A Case of Pathological Lying Occurring in a Soldier. (Review of Neurology and Psychiatry, July, 1917.) Henderson, D. K.

The case recorded is the only one of this type observed in 1,400 admissions of nervous and mental cases. It presents the usual kind of history and features found in this type of disorder, and it is published not only for its dramatic interest, but more for the important educational and administrative problems it suggests.

Such cases are to be regarded as a form of high-grade mental deficiency. The diagnosis rests on the following mental characteristics: (1) Precociousness; (2) roving disposition with inability to concentrate; (3) blunting of emotional tone—lack of affection, sense of guilt, moral sensibility; (4) lying with inadequate precautions to prevent detection; (5) rather attractive personality; (6) total irresponsibility.

What is to be done with these plausible, dangerous, and attractive types? They cannot usually be certified, and prison methods only aggravate the morbid tendencies. The only solution appears to be recognition of these cases in childhood, and treatment in colonies, where they may be suitably trained.

H. DEVINE.

Part III.—Notes and News.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE SEVENTY-SEVENTH ANNUAL MEETING of the Association was held on Tuesday and Wednesday, July 23rd and 24th, 1918, at Edinburgh. The meeting on July 23rd was held in the rooms of the Royal College of Physicians, 9, Queen Street, Edinburgh, Lieut.-Col. David George Thomson, the retiring President, in the chair.

There were present: Drs. T. Stewart Adair, David Blair, C. Hubert Bond, David Bower, A. Helen Boyle, L. C. Bruce, W. M. Buchanan, Robert B. Campbell, J. Carswell, James Chambers, W. H. Coupland, Charles A. Crichton, James Crockett, L. K. Davies, W. R. Dawson, J. Francis Dixon, Thomas Drapes, C. C. Easterbrook, W. F. Farquharson, Claud F. Fothergill, John Fraser, J. W. Geddes, J. R. Gilmour, R. D. Hotchkiss, John Keay, Neil T. Kerr, J. Carlyle Johnstone, J. H. MacDonald, T. C. Mackenzie, S. Rutherford Macphail, John Macpherson, Alfred Miller, Bertha M. Mules, M. J. Nolan, W. W. Horton, James H. C. Orr, L. R. Oswald, Bedford Pierce, W. Ford Robertson, James Grieg Soutar, G. E. Shuttleworth, C. J. Shaw, J. Batty Tuke, and R. H. Steen (Acting General Secretary).

Present at the Council Meeting: Lieut.-Col. D. G. Thomson (President), in the Chair, and Drs. T. Stewart Adair, A. Helen Boyle, Robert B. Campbell, James Chambers, Thomas Drapes, C. C. Easterbrook, J. W. Geddes, Alfred Miller, L. R. Oswald, G. E. Shuttleworth, and R. H. Steen. Dr. Soutar attended the Council on the invitation of the President.

Apologies for unavoidable absence were received from: Sir Robert Armstrong-Jones, and Drs. Fletcher Beach, R. R. Leeper, J. B. Spence, H. Wolseley-Lewis, R. H. Cole, R. Eager, M. A. Collins, Norman Lavers, G. N. Bartlett, F. H. Edwards, Henry Rayner, P. W. MacDonald, J. G. Porter Phillips, Donald Ross, James M. Rutherford, R. Dods Brown, H. de M. Alexander, William Brown, W. Tuach-MacKenzie, and T. E. K. Stansfield.

LXIV.

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The minutes of the previous Annual Meeting having appeared in the Journal, were taken as read and signed.

The **PRESIDENT**: I am reminded by the Secretary that one of our first duties is to deplore the decease of a corresponding member of this Association, Dr. Régis, of Bordeaux, who was known to many of you by his works on insanity, and was one of the foremost medico-psychologists in France. I propose a vote of condolence to his family, which the Secretary will communicate if it is your wish. (This was assented to by the members rising in their places.)

Now, a very pleasant duty that I have to perform is to propose a vote of congratulation to be conveyed to Sir Marriott Cooke, the Chairman of the English Board of Control. I am sure we are all delighted, and, in a distant and indirect kind of way, honoured that one of our colleagues has been honoured by the King with a Knighthood of the British Empire. I feel sure that you will pass the vote. (Agreed.)

The following resolutions were put from the chair and carried:

- (a) That the officers of the Association for the year 1918-19 be:

President—John Keay.

President-elect—Bedford Pierce.

Ex-President—David George Thomson.

Treasurer—James Chambers.

Editors of Journal—John R. Lord, Thomas Drapes.

General Secretary—Robert Hunter Steen.

Registrar—Alfred A. Miller.

- (b) That the nominated Members of Council be: A. Helen Boyle, R. D. Hotchkis, Richard Eager, F. W. Mott, David Orr, G. E. Shuttleworth.

- (c) That F. H. Edwards and G. F. Barham be appointed Auditors.

- (d) That the Parliamentary Committee be re-appointed, and that A. Helen Boyle, Maurice Craig, J. Francis Dixon, E. S. Pasmore, M. A. Collins, R. Eager, L. R. Oswald, R. D. Hotchkis, and J. H. Skeen be added to the Committee.

- (e) That the Educational Committee be re-appointed, and that the following be added thereto: E. B. Sherlock, H. Brougham Leech (*ex officio*), M. A. Collins, R. Eager, C. C. Easterbrook, J. H. Skeen, R. D. Hotchkis.

- (f) That the Library Committee be re-appointed, and that M. A. Collins and D. G. Thomson be added thereto.

- (g) That the Research Committee be re-appointed, and that M. A. Collins and D. G. Thomson be added thereto.

The Acting General Secretary then read the Report of the Council as follows:

ANNUAL REPORT OF THE COUNCIL.

The number of members—ordinary, honorary, and corresponding—as shown in the list of names published in the *Journal of Mental Science* for January, 1918, was 678, as compared with 682 in January, 1917.

The following table shows the membership for the past decade:

Members.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.
Ordinary . . .	682	673	680	690	696	695	679	644	632	627
Honorary . . .	29	32	33	34	35	34	34	34	32	33
Corresponding . .	15	17	17	19	19	18	18	18	18	18
Total . . .	726	722	730	743	750	747	731	696	682	678

During the year no less than twenty members died, many of whom were pillars of the Association. Their worth and scientific attainments have received due recognition from the chair at the quarterly meetings and in the pages of the Journal. The Council, however, feel that in this, their Annual Report, they must record the loss they have sustained in the death of their beloved and esteemed

Treasurer, Dr. Newington, who for twenty-three years managed the finances of the Association, and assisted in enlarging its sphere of usefulness.

Among others not included in the above twenty who have passed away since the New Year must be mentioned Dr. Henry Maudsley, Honorary Member, a tribute to whose life and work appeared in the April number of the Journal. The sum of £2000 which he bequeathed to the Association is a gratifying proof of the confidence he had in it, and no doubt this money will be used, not only to perpetuate his great name, but also to further the main object of the Association—the promotion and cultivation of science in relation to mental disorder.

High honours have been awarded to two members. Sir Marriott Cooke has been made a K.B.E., and Sir Robert Armstrong-Jones has been knighted.

Owing to the war, the annual and quarterly meetings were held in London. The dinners usually accompanying such meetings did not take place. It has, however, been found possible to provide members with light refreshment at the close of the meetings, which has rendered possible some social intercourse.

Special mention must be made of the February meeting at the Maudsley Hospital. This was one of the most largely attended meetings in recent times, and thanks are due to Lt.-Col. Mott for so kindly inviting members to the hospital.

The Divisions have managed to hold their usual meetings, and, though the attendances have not been equal to those of pre-war days, the standard of the papers read and the value of the discussions thereupon have been well maintained.

The Educational Committee has met regularly. The work of the Registrar, already sufficiently arduous, will shortly be increased by the examinations for the Certificate of Proficiency in Nursing and Attending on the Mentally Defective, the first of which will be held in November of this year.

The Parliamentary Committee, besides meeting as usual, has appointed sub-committees to consider how best to carry into effect the resolution passed at the instance of the Status Committee by the annual meeting of 1914.

The Special Committee respecting the College of Nursing is still in being, and, should necessity arise, will be ready to defend the interests of the mental nurse.

The Special Committee to promote the formation of over-seas divisions has been able to make little headway owing to the war.

A Special Committee has been appointed to watch the question of a Ministry of Health. This Committee has met on several occasions, and has conducted correspondence with other medical bodies.

The Journal has appeared regularly. The editorial work has fallen chiefly upon the shoulders of Dr. Drapes, who is to be congratulated on the success of his efforts. Owing to the great increase in the cost of printing and to the shortage of paper, the Council feel that the time has come when it will be necessary to reduce considerably the size of the Journal, but they hope that by the use of smaller type and other measures its usefulness will not be seriously curtailed.

The General Secretary, Capt. M. A. Collins, has found it necessary to resign owing to pressure of other work. He was appointed in 1912, and spared neither time nor trouble in the duties of his office. Having received a commission in the R.A.M.C. in 1915, involving absence from home, he was unable to continue his work from that date. The Council wish to place on record how deeply they appreciate the value of the services he rendered to the Association.

The finances of the Association are in a satisfactory condition. The thanks of the Association are due to the Treasurer (Dr. J. Chambers) for accepting office.

Thanks also are due to the Registrar, Committees, and Divisional Secretaries for their work.

The President (Lieut.-Col. D. G. Thomson) has created a record in occupying the chair for four years. He has not been content to be head in name only, and has presided over all the quarterly meetings and has attended many of the Committees. Though pressed by other duties, he has found time to devote himself to the welfare of the Association, and assist the officers with his sound and valued advice. The Association is deeply grateful to its retiring President.

REPORT OF THE TREASURER.

Dr. CHAMBERS submitted the Revenue Account and Balance-sheet for the year 1917. He stated that the more important part of this period had been dealt with by his predecessor, and he wished to add that when perusing the late Treasurer's

records he was profoundly impressed by the painstaking care and the ability with which the finances of the Association had been managed. It was owing to this that a position had been attained which was enabling the Association to carry on during the existing exceptional conditions.

The Council has sanctioned the investment of a further sum of £250 in War Loan. The dividends of the Gaskell Fund have accumulated, and the Trustees will invest a sum of £100 in the same security.

Dr. Maudsley's munificent bequest of £2,000 has been placed on deposit account with the Association's Bankers. The Council has appointed Drs. R. B. Campbell, R. R. Leeper and R. H. Steen trustees of this fund, and has recommended its investment in War Loan. A Committee has been asked to consider the objects on which the income from this fund should be expended, and to make their report to the Council in November next.

The increased expenditure involved in the production of the Journal is a source of anxiety; the Council has carefully considered this matter, and has decided to reduce the size of the Journal.

The two vacancies in the trusteeship of the Association's funds have been filled by the Council electing Dr. J. Greig Soutar and Lieut.-Col. D. G. Thomson.

The Report was received and adopted.

REPORT OF THE EDITORS OF THE JOURNAL.

Dr. DRAPES read the following report of the Editors:

The difficulties which, as is well known, are connected with journalism of every kind during the deplorable conditions which at present exist in this and other countries, so far from diminishing tend to become more and more acute. Scientific journals such as our own form no exception to the general rule. Dearth of material, and more particularly of research work, which has to be reduced to a minimum owing to the urgent and unceasing demands occasioned by other kinds of work on the time of investigators, was, of course, to be expected. This, with the increasing scarcity of paper, and its prodigious rise in price, as well as the enhanced cost of publication in other directions, makes the task of editing a not altogether easy one. The wish and aim of the Editors has been to keep the Journal, as far as possible, up to its normal standard as regards both quantity and quality of material. How far they may have succeeded in this must be left to the, they hope, indulgent judgment of the members; but, owing to the circumstances above mentioned, it is to be feared that, with respect to quantity at least, this object is no longer attainable. In the matter of expense, that the Editors have not been unmindful of the exigencies of the case is shown by the fact that during the four years 1914 to 1917 the number of pages of the Journal has been reduced by 10½ per cent. as compared with the average of the five years preceding the war. As regards the three numbers already published during the current year, there is a reduction in size of 13 per cent. on the average of the previous four years, and of 22 per cent. on that of pre-war issues. But it is quite evident that a still further reduction in size has become imperative, otherwise the inroads upon the Treasurer's financial resources will become greater than can be reasonably expected.

As shown in the Treasurer's statement, the cost of the production of the Journal for 1917 was £518, as compared with £578 (in round numbers) for the previous year; the average cost for the four years 1914 to 1917 inclusive being £450, and for the five years preceding the war practically £500. That is to say that the average annual cost during the war years was £50 under that of pre-war years.

The Editors wish to express their acknowledgments to all those who have kindly contributed papers to the Journal, and also to the Assistant Editors, Drs. McRae and Devine, for their valued assistance. They are also indebted to Drs. Steen and Chambers for helpful suggestions willingly given on different occasions. Apologies on their part are due to the members on account of the lateness in appearance of the Journal for some time past, which was owing, however, to circumstances over which they had no control. The exceptional delay in the issue of the last (April) number was altogether due to a breakdown which occurred in the factory from which Messrs. Adlard obtain their supply of paper, which caused a suspension of printing operations for some weeks.

JOHN R. LORD.
THOMAS DRAPES.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—For the Year 1917.

REVENUE ACCOUNT—January 1st to December 31st, 1917.

1916. £ s. d.	Dr.	Expenditure.	£ s. d.	£ s. d.	Income.	£ s. d.	Cr.	1916. £ s. d.
578 10 11	To	Journal—Printing, Publishing, Engraving, Advertising, and Postage	518 8 11	...	By Dividends—General	...	127 14 5	£ s. d.
293 11 5	"	Examinations, Association Prizes, and Clerical Assistance to Registrar	312 17 11	...	" Sale of Journal	...	150 5 0	£ s. d.
42 0 5	"	Petty Disbursements, Stationery, Postages, etc.	19 3 6	...	" " Handbook	...	18 2 4	£ s. d.
68 0 10	"	Annual, General, and Divisional Meetings	73 13 0	...	" " Statistical Forms, etc.	...	5 7 10	£ s. d.
103 12 0	"	Rent of Premises at 11, Chandos Street, care of Office, etc.	103 12 0	...	" Advertisements, etc.	...	9 12 0	£ s. d.
8 8 0	"	Audit and Clerical Assistance	8 8 0	...	" Fees, Certificates of Psychological Medicine	...	...	£ s. d.
62 5 1	"	Miscellaneous Account	22 12 8	...	" Certificates of Proficiency in Nursing	...	468 0 0	£ s. d.
1 3 1	"	Library Account	...	...	" Subscriptions	...	658 17 6	£ s. d.
1157 11 9		Balance	1058 16 0	...			...	£ s. d.
270 17 2			387 11 7	...			...	£ s. d.
1428 8 11			£1446 7 7	...			...	£ s. d.

BALANCE-SHEET—31st December, 1917.

1916. £ s. d.	Liabilities.	£ s. d.	£ s. d.	Assets.	£ s. d.	£ s. d.	1916. £ s. d.
160 11 3	To Journal Account, balance of	...	168 14 11	By Lloyd's Bank :—Bankers	...	241 5 3	£ s. d.
30 15 0	" Examinations Account, balance of	...	35 17 6	" Sales Account, balance of	...	169 4 10	£ s. d.
5 13 1	" Petty Disbursements Account, balance of	...	6 13 4	" Subscriptions Account, balance of	...	399 10 6	£ s. d.
7 10 7	" Meetings Account, balance of	...	14 19 9	" Fees Account, balance of	...	...	£ s. d.
25 18 0	" Rent Account	...	25 18 0	" Stocks, value at this date:	...	...	£ s. d.
12 15 11	" Audit and Clerical Assistance, balance of	...	5 5 0	" New Zealand, 3½ per cent.	...	456 14 6	£ s. d.
165 13 6	" Miscellaneous, balance of	...	2 4 9	" Do. do.	...	230 18 7	£ s. d.
408 17 4	" Gaskell Fund	...	114 10 1	" Victoria, 3 per cent.	...	64 12 0	£ s. d.
	Balance :—Balance at 1st January	...	3143 4 5	" Do. 3½ per cent.	...	177 4 8	£ s. d.
	Add: Balance of Revenue Account	...	387 11 7	" Manchester Corporation, 3 per cent.	...	120 7 10	£ s. d.
	" Investments, appreciation of	...	37 18 6	" New South Wales, 3½ per cent.	...	287 3 6	£ s. d.
			3568 14 6	" Midland Railway Preference, 2½ per cent.	...	281 13 2	£ s. d.
	Deduct:			" War Loan, 5 per cent., 1929-47	...	1490 0 0	£ s. d.
	Decrease in Value of Stocks	...	9 9 0			3123 14 3	£ s. d.
	Subscriptions written off	...	9 9 0			...	£ s. d.
			3559 5 6			...	£ s. d.
3242 1 6			£3033 14 10			...	£ s. d.
270 17 2						...	£ s. d.
3512 18 8						...	£ s. d.
331 19 3						...	£ s. d.
37 15 0						...	£ s. d.
369 14 3						...	£ s. d.
3143 4 5						...	£ s. d.
£3552 1 9						...	£ s. d.

(Signed) JAMES CHAMBERS, TREASURER.
(Signed) WOODINGTON & BOLT, F.S.A.A.

MAURICE CRAIG
FRANCIS H. EDWARDS } AUDITORS.

REPORT OF AUDITORS.

The ACTING GENERAL SECRETARY read the report of the Auditors as follows :

We, the undersigned, have had submitted to us by the Treasurer the accounts, books, and vouchers relative to the finances of the Medico-Psychological Association, and we find that they present a true statement in every respect as shown in the balance-sheet now presented.

We regret that existing circumstances render it impossible for either of us to submit the report in person.

MAURICE CRAIG.

FRANCIS H. EDWARDS.

ANNUAL REPORT OF THE EDUCATIONAL COMMITTEE.

The ACTING GENERAL SECRETARY read the report of the Educational Committee as follows :

During the past year this Committee has met on four occasions.

A Sub-Committee appointed to deal with the question of recognition of institutions for the training of those engaged in nursing the mentally deficient has met and submitted a report to the Educational Committee. This has resulted in a number of institutions being recognised for the purpose of teaching and training, and it has been decided that, should the authorities of any other institutions desire recognition, formal application must be made to the Registrar, Hatton, near Warwick, giving full particulars of the institution in question. It has been decided that the first Preliminary Examination for the Mentally Deficient Certificate be held in November, 1918.

A Sub-Committee also has been appointed to inquire into and report upon the present position of the course of training and examination for candidates for the Nursing Certificate.

There have been no entries for the Professional Certificate Examination. One candidate entered for the Gaskell Prize, but eventually withdrew.

Two essays have been sent in for the Divisional Prizes.

MAURICE CRAIG, *Chairman*.

J. G. PORTER PHILLIPS, *Secretary*.

REPORT OF THE PARLIAMENTARY COMMITTEE.

The ACTING GENERAL SECRETARY read the annual report of the Parliamentary Committee as follows :

Your Committee has met four times during the year.

Many subjects have received careful consideration and attention. Among these may be mentioned the proposed Ministry of Health, which has been discussed, and at the instance of your Committee the Council has nominated a Special Committee to watch the interests of the Association in this matter.

With regard to the question of lunacy legislation, a Sub-Committee has been appointed for England and Wales. Many meetings have been held, and have been well attended, and the stage of considering a draft report has been reached. It may, however, be said that the Sub-Committee has decided to confine its consideration to what seems to be the most promising matter, *vis.*, the advisability of securing such modification in the Lunacy Laws as will render possible efficient treatment for cases of mental disorder at an early stage. Sub-Committees for Scotland and Ireland have also been formed to deal with the requirements peculiar to each country. It is the intention of your Committee that these Sub-Committees should exchange useful information, and in the event of any question involving the three countries that they should co-operate.

Correspondence has taken place with the Home Office, urging the view of the Committee that criminal lunatics convicted on more than two occasions should not be sent to County and Borough Asylums.

Your Committee has been in communication with the Board of Control with reference to the jurisdiction of magistrates in connection with the licensing of private asylums.

REPORT OF LIBRARY COMMITTEE.

The ACTING GENERAL SECRETARY read the report of the Library Committee as follows:

The Library has been fairly well used for purposes of reference, and about the usual number of books have been issued for home reading. Many members on military service have taken advantage of borrowing books when they have been on duty in hospitals and camps in this country.

The periodicals have only come to hand very erratically, and some of the foreign ones have been lost in transit.

The Association is indebted to the family of the late Dr. Hayes Newington for a handsome donation of about fifty volumes, and to Dr. Henry Rayner for about thirty volumes. Dr. T. B. Hyslop has also made numerous presentations.

HENRY RAYNER, *Chairman*.

R. H. STEEN, *Secretary*.

There were no reports from Special Committees.

On the motion of the Acting Secretary, it was agreed to allow the expenditure of a sum of £25 on the Library.

DATES FOR THE VARIOUS MEETINGS FOR THE YEAR.

The following dates were fixed for the Annual, Quarterly, and Divisional Meetings of the Association and Quarterly Meetings of the Council:

Tuesday, November 26th, 1918; Thursday, February 20th, 1919; Tuesday, May 20th, 1919.

South-Eastern Division—Left to the discretion of the Divisional Secretary. Northern and Midland Division—October, 1918; April, 1919, at the Mental Hospital, Middlesbrough. South-Western Division—October 25th, 1918; April 25th, 1919. Scottish Division—November 15th, 1918; March 14th, 1919. Irish Division—November 7th, 1918; April 3rd, 1919; July 3rd, 1919.

The PRESIDENT: We now come to item No. 7, the election of honorary members of the Association. I have to propose Sir Marriott Cooke, K.B.E., M.B., Chairman of the Board of Control.

Dr. SOUTAR: I have very great pleasure in submitting to this meeting the proposal that has come up from the Nominations Committee and the Council, that Sir Marriott Cooke be elected an honorary member of the Association. As you know, this is an honour which is not lightly given. In fact it is very jealously guarded. In the case of Sir Marriott Cooke, however, there can be no doubt as to the rightness of the conferring of this honour upon him. Those of us in England, probably, have had better opportunities than many who are present this afternoon of knowing the worth of that gentleman. His career from the beginning up to the present time has been one of extraordinary success and the result of very fine work. He was elected to the junior staff of the Powick Asylum soon after he left King's. Within three years he was appointed superintendent of Wilts Asylum, and then after four years he was called back to Powick, where he remained for many years, doing excellent work. He took a very great interest in the work of this Association, and several of his papers have appeared in our Journal. In 1898 he was appointed a Commissioner in Lunacy. This was continued in 1913 with the Board of Control. In 1916, on the resignation of Sir William Byrne, he became and is now Chairman of the Board of Control. In that position he has done very great work, work that will live in the history of our Association and in the history of the Lunacy Department generally. You will remember that when there was a great call in the country for accommodation for our sick and wounded soldiers, Sir Marriott Cooke and others of his colleagues met the superintendents of the asylums and consulted with them. It was one of those instances where we felt that nothing was to be thrown upon us, but we were consulted and asked about it, and that we appreciated very, very highly. From that moment until now this great work has been carried out by a courteous and thoughtful co-operation between those who require asylums and those who are in a position to grant them. Again and again it has been acknowledged by the Board of Control and by Sir Marriott Cooke that if it had not been for the co-operation on the part of the

asylum authorities and the asylum staffs, the work that has been effected and has been so valuable could never have been carried out. That is how Sir Marriott Cooke and others have effected this very great work which has resulted in sixteen of the asylums of England being converted into military hospitals in which over 300,000 sick and wounded soldiers have been treated. I need not say anything more, because I think I have indicated sufficient to show that we are to-day desiring to honour a man who from the beginning of his career up to the present time has done most excellent service, and has brought distinction, not only upon himself, but upon our specialty too. I have very much pleasure in submitting Sir Marriott Cooke's name as an honorary member of this Association. (Applause.)

The PRESIDENT: The next name on our Agenda is that of Dr. William Bevan-Lewis, M.Sc., M.R.C.S., L.R.C.P., late Medical Director of the West Riding Asylum, Wakefield, late Professor of Mental Diseases, University of Leeds.

Dr. BEDFORD PIERCE: Mr. President, Ladies, and Gentlemen, I do not think there is any living man in this country or in any other country who more deserves honour at the hands of this Association than Dr. William Bevan-Lewis. Dr. Bevan-Lewis is a highly distinguished man, and is a pioneer in many departments of medicine. When we think of the early work that he did in connection with the anatomy of the brain, the histological work that he did in regard to the varying features of the cortex, the extraordinary clinical work which is recorded in his *Text-Book of Mental Diseases*, which for many years will be dug into, and in which we will find many jewels which some of us are not altogether aware of, when we also think of the extraordinary influence he had on young men in his laboratory at Wakefield, where he touched with his wand of enthusiasm so many, and had such a wide influence in educating and bringing forward so many persons who have since become prominent—when we think of all these things we shall be agreed that Dr. Bevan-Lewis should become an honorary member of this Association. He received one of the earliest honorary degrees at the University of Leeds. I had the pleasure of being present when he received it, and it is, therefore, also a pleasure to me to speak a word for him in this room. I think that future historians will find that Dr. Bevan-Lewis has been first in many discoveries which other people may have appropriated later on. His singular humility perhaps may have stood in his way, in a sense, of attaining perhaps the full fruits which he really deserves; but, nevertheless, I think medicine will count Dr. Bevan-Lewis among the truly great men. I am very pleased to support this proposal that Dr. Bevan-Lewis become an honorary member of this Association. (Applause.)

The PRESIDENT: In No. 8 on the Agenda you will find the three following gentlemen are proposed for election as ordinary members: Dr. Cedric William Bower, Dr. A. Edward Evans, and Dr. Francis Sutherland.

The five gentlemen, after ballot, were duly elected.

Dr. OSWALD: The great honour has been done me of asking me to put the next resolution before you—namely, a vote of thanks to the President and Officers of the Association. This is a resolution which I can put before you with the utmost confidence, being satisfied that it will be unanimously carried. Those of us who were present at the induction of Col., then Dr., Thomson, in Norwich in 1914 predicted that his term of office would be a most brilliant one. None of us, alas, predicted its duration! Now, at the end of four years of strenuous work, it comes to an end, and we wish to express to him our thanks for the work he has done, for the unceasing labour and the great amount of time which he has given to it. He has not done his work in merely a routine way; he has given of his time and of his labour when otherwise he was very fully occupied. He has attended the meetings of the divisions, as well as the meetings in London. Jealous as the Association naturally is on whom it bestows his highest honour, it must feel to-day that in the election of Dr. Thomson at that time it did not only honour to him, but honour to itself and to every individual member of the Association. I am sure it is, your wish that we should convey to Col. Thomson our thanks for the work he has done, for the great amount of time he has given to the work of the Association, for the painstaking way in which he has presided at all its meetings, and for the utmost fairness he has shown to everyone, not only at the meetings of the Association, but at the meetings of Council and other meetings over which he has presided (Applause.) The resolution which I have to propose is: "That a vote of thanks be given to the President and to the Officers of the Association." I feel that to

those who know Col. Thomson better than I do it is presumptuous for me to say so much. I recall, of course, that he is a brilliant student of the University of Edinburgh, and, unlike many Scotsmen who have crossed the border and have not returned, he has come back now. He took up office in Norwich, and it is now peculiarly appropriate that he should demit office in his own romantic town of Edinburgh. The others to whom we wish to give our thanks are the Treasurer, the Editors of the Journal, the General Secretary, and the Registrar, and perhaps you will allow me to say a single word about each. I suppose I may consider myself as belonging to the seniors of the Association. For many years I looked up to the late Treasurer as a man of the highest honour and probity, and as one whose guidance was to me of the greatest value. The Association cannot do much more than deplore the fact that since it met in London in 1917 there has passed from our ranks one who had the respect and the personal affection of every man with whom he came in contact. The Council's report has referred to the loss that has been sustained. Its expression was a peculiarly happy one, that in the last year it has lost some of its pillars. Fortunately, other pillars take their place, and I think that those of us who heard the report of Dr. Chambers to-day, those of us who heard at the Council meeting his terse and explicit statement of the affairs of the Association, believe that in him we have one who will be as careful of the whole affairs of the Association, as jealous of its honour, and as careful of its finances as was the late Dr. Newington, whose death we so much deplore. The Editors of the Journal—and I would ask you to consider along with them the sub-editors—are also to be congratulated and to be thanked for the work they have done in a very, very difficult time. I think Dr. Drapes is to be particularly congratulated on the fact that during very difficult times he has maintained the Journal at a pitch of excellency regarding which he need have no regrets, and which will make the last year compare favourably with any of the years that have gone before. Dr. Lord also deserves the warm thanks of the Association, as do the sub-editors, who have been very helpful in the work of production of the Journal and keeping it up to its high standard. In Dr. Robert Hunter Steen, who has been elected General Secretary of the Association, we have one who has already proved his worth, he having, as it were, served an apprenticeship to the job. Having proved his sterling worth and merit, he is now advanced to the full post of General Secretary, which, I am sure, he will fill with honour and distinction to himself and with the approval of all those he comes in contact with. As for Dr. Miller, the Registrar, ever perennial and ever young, every year one sees him he is more optimistic that he was the year before. I cannot say how warmly we regard him or how much we feel that our thanks are due to him for the work that he does; I think that even more, the whole of the mental nurses of Great Britain ought to be specially grateful to Dr. Miller because they have in him a most sympathetic friend, as was evidenced in the discussion to-day, one who is desirous of giving them every chance, at the same time one who is most desirous of keeping the certificate of the Association at such a pitch that it will be valued and regarded highly, not only by the nurses themselves, but by all those whom they are called upon to professionally attend. There is an old saying, ladies and gentleman, and I would ask you to bear it in mind—I think it is by Shakespeare, but I am not quite sure, "Still be kind and eke out my imperfections with your mind." I would like those gentlemen whom you see before you not to take the measure of our thanks by the poor eloquence of my words, but to believe that we are deeply and sincerely grateful to them. We ask them to accept our very best thanks. If I may close with a personal note it is this, that in coming in contact with the President and with the office-bearers of the Association I have a constant sense of encouragement; I never meet them but I feel stimulated and cheered and encouraged when I think of the fact that in addition to their own work, which during the last year must have been of the most trying nature, they have given of their time so freely to work which we appreciate so highly. I have great pleasure in moving that we give our thanks, our very sincere and hearty thanks, to the President and to the other Officers of the Association, and to tell them that jealous as the Association is of the qualities of mind and heart which those who fill its offices must have, we acknowledge that we have in them men in every way fitted for the positions which they have held during their term of office. (Applause.)

Dr. BOWER: I have been asked to second this proposal, a duty which I gladly

perform. After what we have heard from Dr. Oswald with regard to Col. Thomson and the officers of the Association there is very little left for me to say. I saw Dr. Thomson, as he was then, put in the chair of this Association in Norwich, the highest honour that we can confer on any of our members, and we all know that he has thoroughly deserved it. With regard to the other officers, I need say nothing more after what Dr. Oswald has said, and I simply second the motion and put it to the meeting. (Agreed.)

The PRESIDENT: Custom has it that I should reply to the vote of thanks which you have kindly accorded to myself and to my fellow-officers of this Association. I cannot in the least aspire to the extremely eloquent and kind way in which Dr. Oswald has proposed it, but I thank you very sincerely on my own behalf and on behalf of my fellow-officers. Appreciation of work done is the highest and best reward that follows service for one's fellows. I should just like to add a personal note. To-morrow week it is forty years since I left my University here, armed with the magical key to practice, the M.B. of the University. I little thought when I left here as a graduate that I should ever attain the honour of presiding in these august halls of the Royal College of Physicians in Edinburgh as the President of a learned Society. It is a great honour, and I feel it very much. That I may have given satisfaction to you is, I hope, possible, but I certainly have not given satisfaction to myself. I had hoped when I became President, when we were all living in a kind of fool's paradise in July, 1914, that I would have the pleasure of going round and visiting all the Divisional Meetings—a very good example set by a former President—but that pleasure, of course, has been denied me. I looked forward to the great many social delights and intercourse that one would have had in the course of a year's presidency with the Council and other members of the Association, but all one's years of office have been shorn of these pleasures; and so, beyond merely attending every meeting possible in London, which is only a few hours from my own home, and attending the meetings of Committees, and doing the best I could to advance things which had to be attended to in spite of the war, and to hold the balance between various contending interests, I have not come up to my own standard of what the President of this Association should be. Still, I have done my best, and it is very good and kind of you to accept that best. A President, however excellent and well-intentioned he might be, would be helpless without his officers. Dr. Steen has been my right hand. He keeps me right, as you have seen to-day. He is perhaps rather more severe in Committee than he is here. You are well aware of his labours, but I do not think you are so well aware as his fellow-officers are of the immense amount of work he puts in. Most of us have been secretaries of one kind and another, and we all know the great amount of detail that one has to attend to. I am more than delighted that Dr. Steen has taken on the mantle of Dr. Collins and of another predecessor of his whom we welcome here to-day, Dr. Bond, of the Board of Control. Dr. Chambers is a most admirable Treasurer, and we look for wise and sound advice from him in succession to Dr. Newington, perhaps more than we could expect from any other member of the Association. The same applies, to a lesser degree perhaps, to the other officers of the Association. Now, we want to get on to the principal business of the afternoon. After again thanking Dr. Oswald for proposing, and Dr. Bower for seconding, and you for recording this vote of thanks, I will proceed to introduce to you my successor. I do not know that this is the place, or even the time, to tell you about Col. Keay. It is not necessary—you know him. He is here on his own native heath—at least, that is a mistake, as I think he was born in Ireland—but, at all events, he is here among his colleagues, who know him better than I can tell you. We all know of his professional career—first at the Crichton, one of the great royal asylums of Scotland, and then at Mavisbank, here at Edinburgh, and at Inverness, and now in his present great post at Bangour. I have made repeated visits to Bangour, and I am afraid my staff must be perfectly sick of the name of Bangour. I am always quoting Bangour to them, and I look on it as a place converted into a war hospital which is an example to any other institutions of the kind. I may mention that I gave Dr. Keay a few of his first lessons, but he has far passed his master now. He has developed and is in charge of a war hospital such as there are few in any other part of the country. With these few words I introduce Col. Keay to you as my successor, and I invest him with the insignia of office. (Applause.)

At this stage Lieut.-Col. John Keay took the chair as President.

The PRESIDENT: Let my first act be to thank you most sincerely for your kindness, and to assure my old friend, Dr. Thomson, that the pleasure and the honour of which I am the recipient through your kindness are enhanced very much by the fact that I have received this badge of office at his hand. (Applause.) The first duty of a President is to present prizes and medals. I have much pleasure in announcing that a Divisional Prize has been awarded to Dr. Hubert J. Norman, who unfortunately is unable to be present to receive it. There are no other prizes or medals to be presented. That clears the way to another duty which unfortunately the President has to perform, and that is to deliver a presidential address. (Lieut.-Col. Keay then delivered his presidential address.)

Dr. CARLYLE JOHNSTON: I have been asked to move a vote of thanks to the President for his address. I am rather sorry that one of the older members of the Association has not been chosen for this important duty. I rather think I am one of the most junior of the medical officers present. However, in spite of that objection, I consider it not only an honour but a pleasure to be asked to move this vote of thanks, because I think that probably I have known Dr. Keay about as long as anyone here. It is not for me at this particular time, or in this place, to say anything nice about Dr. Keay—he has already heard some nice things said about him, and he will hear more before we are done with him—still I should like to say how much it pleases me, and how much it pleases all my old friends in Scotland particularly, to see Col. Keay in the chair to-day. Col. Keay, among his other qualities, good or bad, has one which is very marked, and that is the quality of self-suppression and withdrawal from the public eye. It is very likely that to several persons here Col. Keay may be an unfamiliar figure and his reputation to a certain extent may be unknown, but it is certainly not unknown in Scotland. I should like to say that Col. Keay has gained the affection as well as the respect of every one of his brothers in the specialty in Scotland, and we rejoice to see him in the position he occupies to-day. We have no doubt that he will be an ornament to the chair that he occupies. With regard to the presidential address, it has not been the custom to criticise it, and I do not propose to break that rule nor to make a long speech, but one cannot sit down without saying something. We have all enjoyed the address very much. Those of us who know Col. Keay expected to hear what we have heard—that is to say, an extremely level-headed moderate speech, a speech dealing with serious topics in a serious way, but not by any means in a pessimistic way, because Col. Keay, beginning as he began with the gaiety of the Irishman, and proceeding with the seriousness of the Scotsman ended with that same note of cheerfulness with which he began, with that hopeful outlook which has actuated Dr. Keay in all his work. It is scarcely necessary to go over the different points in the address, because it is a paper that one wants to study closely. He has dealt with the very serious problems that the war has brought before us, and, being a Scotsman, he has not attempted to solve these problems, but it is necessary that we should all think about them, and we shall all have to think about them. There is no doubt that our financial future will give very great concern to the younger members of the Association and to their children. Dr. Keay has referred to and has touched with a firm and discriminating hand the many social problems that are bound to arise and to interest, not only us here, but all our fellow-citizens. I only refer to one or two of them. He spoke of the results of those horrible experiences which many people have suffered from this war being handed down to their children. Of course, that raises the question whether such experiences are ever transmitted. It is a good old-fashioned belief that they are transmitted. While it may be that these horrible experiences will be handed down, there is also the tradition of the great deeds that have been done in this country, the noble example of our brothers, our fathers, and our children, and that will more than obliterate any evil that may arise from the horrors and dreadful mental experiences that so many of our people have suffered, not so much in this country as across the Channel. Then passing over practically all the other points and coming to the end, Col. Keay, in dealing with the question of prevention of insanity, touched upon what has always seemed to me to be perhaps the most important practical problem of all, and one which will have to be taken up in a practical way by our Statesmen in the future. With regard to the treatment of insanity he also had very many interesting things to say. I think that though he

only referred to it in a sort of side note, what he said about the treatment, if it was not very tragic, would be very comic—that we are not allowed to treat an insane man until there is no hope of doing any good. That has been said before, and it cannot be said too often. We may hope to get over that when the war is over. Now, I am afraid I am doing what I said I was not going to do, and that is making a speech. I would only ask you to accord to Col. Keay a very hearty vote of thanks for his extremely excellent and able address. (Applause.)

Dr. NOLAN: I wish to second this vote of thanks to Col. Keay. I am sure you have all listened, as certainly I have, with the greatest appreciation to his address on the "Psychology of the War and the Problems arising out of it." It needs no words of mine to accentuate your vote of thanks to our President for his extremely interesting address. (Applause.)

The PRESIDENT: Dr. Carlyle Johnston, Dr. Nolan, Ladies, and Gentlemen,—I thank you very much for the patient way in which you have listened to me, and the kind way in which you have received my address. We have two papers to be read this afternoon, one by Dr. Ford Robertson and one by Dr. Fothergill. Dr. Robertson has asked me to call on Dr. Fothergill first, because Dr. Fothergill's paper was postponed from the quarterly meeting in May. I therefore have very much pleasure in asking Dr. Fothergill to read his paper.

Dr. Fothergill and Dr. Ford Robertson having read their papers, the proceedings were adjourned till the next day.

WEDNESDAY, JULY 24TH, 1918.

On Wednesday, July 24th, the meeting reassembled at the Edinburgh War Hospital, known in pre-war days as Bangour Village Asylum, and now a military hospital of 3,000 beds. In the forenoon the members and guests were conducted by the President over portions of the Hospital, and inspected with much interest the Orthopædic Section, with its Manual Curative Workshops, its Massage Department, and its installation of Baths. The Marquee Camp, an extension of 1,000 beds under canvas, was also visited.

During the interval the members and a number of their lady friends were entertained at luncheon, to which they had been kindly invited by Col. and Mrs. Keay.

In the afternoon interesting demonstrations were given by members of the visiting staff of the Hospital, and before beginning these the President reminded members that on the previous day they had been the guests of the Royal College of Physicians of Edinburgh. He moved that the thanks of the Association be expressed to the President and Fellows of the College for their kindness and hospitality, and the motion was cordially agreed to.

The demonstrations were then proceeded with, and there was in the first place a microscopic demonstration on malaria and dysentery by Major D. G. MARSHALL, I.M.S., Consultant in Malaria, Scottish Command, and Dr. LAURA K. DAVIES, Medical Officer in Charge of the malaria wards at Bangour.

One series of slides showed the malarial parasite at all stages of growth, and another the differences between benign, tertian, quartan, and æstivo-autumnal parasites. A display of mosquitoes attracted much attention.

Of special interest to the members were sections showing the changes in the brain in "cerebral" malaria and sleeping-sickness.

Under another set of microscopes the organisms of bacillary, amœbic, and flagellate dysentery were shown, including sections of intestines and liver, in which the destructive changes due to the *Entamoeba histolytica* were clearly demonstrated.

Lieut.-Col. Sir HAROLD STILES, R.A.M.C., Assistant Inspector of Military Orthopædics, then demonstrated some cases from his department. He said: I am going to show you just a few cases which I hope will illustrate to you the kind of work we are doing in the Orthopædic Department of this hospital. I do not wish to take any credit for this work at all; the credit should be given to the C.O. of the hospital and my able assistants, who have so willingly and so loyally assisted me in the work. I am in rather a peculiar position. I happen to be a general surgeon, and I am responsible for the orthopædic work in this hospital. I would like to pay tribute to my assistants for the very able assistance they have given

me. I think the ideal Orthopædic Department is one that combines the efforts of a general surgeon with those of an orthopædic specialist who has been trained to this work, and has been specially trained to the after-treatment of the cases. There is one very important difference to my mind between orthopædic surgery and general surgery—and when I refer to general surgery, I refer more particularly to that department of it which is known as abdominal surgery, which is a very fascinating branch of surgery, and has, I think, been rather responsible for detracting the general surgeon from the problems that we have to deal with in orthopædic surgery. The general surgeon does some very dangerous and important operation: he shuts up the abdomen and Nature does the rest. Why? Because he is dealing almost entirely with involuntary muscles, and when he has done his work there is practically nothing more to do. Now, when the orthopædic surgeon has performed his operation, he has done only half of his work. The other half consists in the after-treatment, which is very often a tedious and laborious business, requiring a great deal of conscientious intensive work.

The first case I am going to show you is not orthopædic, but is a nervous case, and that is the reason I am showing it. This man got a piece of shrapnel inside his skull in the month of April. He was taken to the casualty clearing station and was X-rayed, and a fragment was discovered inside the skull. An opening was made in front, but the fragment was not found, and very wisely no further or more persistent attempt was made at that time. He eventually arrived at this hospital. He had no paralysis, but had a very serious symptom in the shape of a persistent headache. I found no eye symptoms and no other symptoms except the headache. I got Capt. Bramwell to see him, and we both agreed we would see whether there was any chance if the headaches would improve. They did not improve, and the patient begged me to do another operation. The first thing was to localise the piece of shrapnel—it was a cubical piece, about the size of an ordinary die. It was localised as being nearly two inches from immediately behind the ear. Before I attempted the operation I said to Major Rankine, who has charge of the X-ray Department, "It is all very well to tell me it is two inches from the ear, but I would like to control that experiment, and I would like to know exactly how far it is from a corresponding point on the opposite side of the head, and you will kindly X-ray him over again." I got a report showing that it was just four centimetres from this side and ten centimetres from a corresponding point on the other side. We then got a skull and bored a hole on the corresponding point of entrance and on the corresponding point on the other side, and we got a string and stretched it through. (Explained on skull.) We got the foreign body in almost the same position as it was X-rayed before. I said, "The next thing I want to do is to measure the man's head with a pair of calipers from these two points. If the localisation was correct, then the calipers should give a measurement of fourteen centimetres"—and that is exactly what it did. Then I said, "I am quite willing to go on." The flap was turned down and the base of the brain was lifted up. After some little difficulty we found the foreign body between the base of the brain and the skull adhering to the membranes, and I was able to hook it out. That was done about three weeks ago. If you ask the man how he is now, he says that he is all right, that he has no headache except a little at night. Following the operation, the man could not quite lift his foot—foot-drop—but now he can lift the foot. The hand dropped a little—there was slight paralysis of the hand, but he can now move his hand and fingers. It is only three weeks since the operation. The paralysis is rapidly disappearing, and I am sure it will be all right.

The next case. This man was wounded last year—an extensive shrapnel wound which lacerated the median nerve in the upper half of the forearm. It was so extensively destroyed that we could not get the ends together. Now, I want to show you what the result is of paralysis of the muscles in the hand which are supplied by the median nerve. The man bends his wrist perfectly well, and he bends his thumb and the fingers; so he has only paralysis below where he was injured. These muscles include two and a half muscles of the thumb, what we call the abductor of the thumb, the opponens, and one half of the short flexor. Now, first let me show you what kind of disability the paralysis of these muscles produces. What is the function of these two and a half muscles? The main function is to oppose the thumb to the other fingers, and to help to produce a pincer action between the fingers and the thumb. That is what these muscles do along

with the long flexors. We will ask this man to do this. You will see he is not efficiently opposing the pulp of the forefinger and the thumb. Next, let us ask how powerful are his attempts. We can test that at once. If I take a card in my hand and grip it firmly, thus, I am flexing my forefinger and I am flexing my thumb. Now, you will see this man cannot grip the card in the same way, try all he can. He can write, but only with a very large pencil. This case demonstrates that you cannot write properly unless you have the small muscles which are supplied by the median nerve. Now, why? The median nerve does not only supply these two and a half muscles; it supplies two other muscles, the outer two lumbricals. This case illustrates the importance of these lumbrical muscles. When you have not that muscle you find that when the flexor tries to bend the finger there is nothing to resist it. The flexor muscles will never contract powerfully unless you have extensor muscles to resist them; and, therefore, when we close our hand like that, and bring our flexor muscles into action—if you look on the back of my arm you see these muscles. (Shows.) The object of the lumbrical muscle is in part to give sufficient resistance to the flexor muscle. Now, he has the interosseous muscle—it is not paralysed, but it shows you that the lumbrical muscle helps the interosseous muscle, and, if he has not it, he has not enough resistance to allow him to grip. So it produces a distinct disability, and that is why, in spite of these muscles alone being involved, it is important in these cases. There is one other point I want to show you. This man has loss of sensation in the outer two fingers. You will see what happens when he tries to button his coat. He can bend his finger and his thumb perfectly well, but he cannot button his coat. The explanation of that is that he cannot feel the button, and he does not know when he is grasping it properly.

The next case is a man whose ulnar nerve was shot through, which is rather the more important muscle nerve as regards the intrinsic muscles of the hand. He is shown to demonstrate what disability is produced by paralysis of the muscles of the hand supplied by the ulnar nerve. We shall find that the superficial muscles of the thumb are present—that is to say, he can oppose the thumb and the fingers—the pincer action; he can grip firmly. Now, if you ask him to grip like this, between the thumb and the palm, he cannot grip firmly; so he has lost the muscles which allow the thumb to press against the palm in this position which I show you. The ulnar nerve supplies all the interosseous muscles. When this man was first wounded he had only the lumbrical, and he had not the interosseous muscle, but the condition is improved, because, although he has lost his interosseous muscle, he has developed his lumbrical muscle by exercise. You see a long scar here. The reason for that is that he had a large part of the ulnar nerve destroyed. The ulnar nerve runs along here (shows), and so when you bend the elbow you put it on the stretch, and when you straighten it you tend to relax it, so it is obvious that when you have taken a bit out of the ulnar nerve you must not flex the elbow. That creates a difficulty in bringing the ends of the nerve together. You must, therefore, in order to get the ends together, transpose the nerve, and so we dissect the nerve here (explains) and transpose it to the front of the elbow. The result is, if we do that, we can take away two and a half inches of the ulnar nerve and still get the ends together. That was done in October last.

Next case. This man had a not uncommon wound. As he was marching along he got a bullet through his upper arm from front to back—the median and ulnar nerves were both cut and were subsequently sutured. He has not yet entirely recovered. Now, I want to show you the disability which he has from both nerves being involved. His median nerve has partly recovered—it is recovering better and quicker than the other one. You will observe that he is able to bend his forefinger and thumb, proving that the supply has already reached these long muscles of the forearm, but it has not yet reached the small muscles of the hand. The result is that this man has paralysis of all the intrinsic muscles of the hand. I have shown you paralysis of the median and the ulnar separately, and I will now show you the two combined. Although he has the long flexor muscles we will ask him to convert the forefinger and the thumb into a pair of pincers; he cannot do it. He cannot bring the point of his index finger and the thumb into opposition. He rolls up the index finger. Why is that so? Because he has paralysis both of the lumbrical and interosseous muscles; both these muscles are paralysed. The function of these two muscles is to keep these two joints partly extended and to

act in opposition to the flexor. If there is no opposition to the flexor, then it folds up the finger, and the finger never reaches the point of the thumb.

Next case. This man has the median nerve injured here. (Showing.) He has not complete paralysis; he can bend the thumb and the forefinger. He has irritation of the sensory fibres and neuralgia in the palm of the hand. We must operate.

Next man. This man was lying in bed underneath an open window, and he developed paralysis of one muscle, the muscle which should keep the scapula in position and fix it to the chest wall. What is the cause of that paralysis? Why should the one muscle be paralysed? The answer is an anatomical one. It is generally said that it is due to rheumatism, but it is very difficult to see how rheumatism should attack one nerve only, and, therefore, we want to know its anatomy. It is peculiar. It has three roots. These three roots are slender, and all three little roots have to traverse a very thick, strong muscle in the neck before they join, and this muscle is the scalenus medius. It was an inflammation of that muscle which pressed on the roots of the nerves to that muscle. I saw the other day a lady who said she had been doing farm work; she had been carrying the water and turnips. How was that paralysis produced? That is one of the muscles which helps to keep up the chest wall. There was a drag upon that muscle, and it was the drag on that muscle that overstretched the three little roots.

Next case. Here is a man who was shot through the neck and the spinal accessory nerve was severed. Get him to lift up his shoulder. You will see he has great difficulty in doing so. It is difficult for him to do any work which entails any sustained elevation of the shoulder.

Next case. I am now going to talk about the musculo-spiral nerve. This nerve extends the wrist and extends the fingers. This man was injured in the upper arm. We had great difficulty in getting the ends together, but we found that if he could bend the elbow we could then get the ends together. Seven days ago we took a large piece out, and we were able to get the ends together.

Next case. Supposing we could not get the ends of the nerve together, what would happen? Some of you have seen soldiers going about with their hands dangling. This man has had a very severe injury to his upper arm, destroying a long section of the musculo-spiral nerve. What we have done in this case is to transplant some of the muscles which are supplied by the median and ulnar nerves from the front of the arm and from the front of the wrist to the back of the wrist. Briefly, the pronator radii teres is transplanted into the extensors carpi radialis longior and brevior; the flexor carpi radialis into the extensors ossis metacarpi pollicis and brevis pollicis; the palmaris longus into the extensor longus pollicis, and the flexor carpi ulnaris into the extensors of the fingers. So we have restored every one of the paralysed muscles to this man's hand. The man can write perfectly well.

Next case. Here is a man who had a drop-foot. The drop-foot may be produced by a wound of his great sciatic nerve. If it is the external division of the great sciatic nerve, it is only the muscles which lift up the foot that are paralysed; if it is the internal, then it is the muscles which plantar flex the foot. In this case there was an extensive wound involving the external nerve—the nerve which lifts the foot. That nerve could not be sutured. In a case like this you must do one of two things. As a rule, you supply the man with a boot which prevents the foot dropping. You can do away with that apparatus, however, if the man will submit to an operation, and the operation is to sling the foot. We take the paralysed extensor muscles and fix them into the bone of the leg, as I show you. The result is that this man will be able to walk about perfectly well without any apparatus.

Next case. Here is a man with such an apparatus. He has to wear an iron or something of that sort.

Next case. Here is a man who cannot lift his foot up because the muscles have been destroyed. We shall do the same thing with him—we shall sling that foot.

Next case. Here is a serious sort of a case. The man has been shot right through the shoulder, and he came in with a dangling arm. What is done in such a case is to open up the wound after it is completely healed, free the end of the bone, take away all the scar tissue, and jam the two bones together. The secret of that is the after-treatment, and here is where my orthopædic friends come in. Immediately you have done the operation you must put the whole chest and arm in plaster-of-Paris.

The PRESIDENT: I am sure we are all very much indebted to Sir Harold Stiles for the exceedingly interesting demonstration which he has given. (Applause.) I now call on Capt. Edwin Bramwell, who will show certain cases illustrating functional neuroses.

Capt. BRAMWELL said he would confine himself to the examination of a case which had just been admitted to the Orthopædic Department, which he had not yet examined, and in which the diagnosis did not appear to be quite obvious. In this way he would have the opportunity of referring very briefly to problems of diagnosis and treatment as they arose. The patient was then demonstrated. The man was paraplegic, and it was ascertained that the paralysis, which was of some months' duration, dated from a shell explosion, in consequence of which he had been buried. The paralysis was found to be complete, with the exception of some flickering movements of the toes of one foot. The absence of muscular wasting and rigidity was referred to. The facts that the knee- and ankle-jerks were present, equal and somewhat hyperactive, that there was no ankle-clonus, that the signs of Babinski, Gordon, and Oppenheim were negative, were noted and commented upon. A symmetrical sensory loss of the stocking type affecting both lower extremities to about the level of the knees, and a pronounced defect of the sense of position in the lower limbs were demonstrated. It was ascertained that there was no trouble with the sphincter, though for some time after the accident there had been retention, unaccompanied, however, at any period by incontinence of urine. The conclusion was arrived at that not only were there no signs of organic disease, but that certain indications present clearly pointed to the functional origin of the paraplegia. The question arose, Will an X-ray photograph of the spine afford additional help in connection with diagnosis? The spine had been already X-rayed, but the demonstrator remarked that he did not wish to see the photograph, for he was quite satisfied as to the diagnosis. Even granting that the X-rays showed evidence of a fracture, this would in no way affect his opinion either as regards the nature of the case or the prospect of recovery.

X-rays are sometimes dangerous. Capt. Bramwell referred in this connection to the case of an officer whom he had recently been asked to see, and who was suffering from a paraplegia of two years' duration, which was, beyond question, of functional origin. In this case an X-ray had been taken, and the photograph, which was a very beautiful one, showed a perfectly definite fracture of the lamina of the fifth lumbar vertebra on one side. The patient had been told that he had fractured his spine, and by his bedside lay the photograph which he produced in proof of this perfectly correct assertion. The fracture was not, however, the cause of the paralysis. Previous opinions expressed to the patient and his relatives had made such an impression that nothing would convince them that the fracture and paraplegia were not related as cause and effect. A distinguished neurologist under whose care the patient had previously been for a short time, and who had not insisted on an X-ray examination, was the subject of unjustifiable censure, whereas the physician who had had the spine X-rayed and diagnosed the fracture had apparently been the recipient of much *kudos*, since to him was attributed the credit of ascertaining the true cause of the paralysis. On the other hand, it was the very fact that an X-ray had been taken, together apparently with the failure on the part of the consultants who subsequently saw the case to indicate the absence of relationship between the fracture and the paralysis, which had been responsible for the perpetuation of the latter.

After this digression, the demonstrator turned to the patient and told him that he was satisfied there was no actual injury to the spinal cord or nerves, and that he could promise him that he would completely recover. How, then, was this to be achieved in the present case? In the first place there was to be no question of mystery. Experience of similar cases justified the assertion as to the diagnosis, and the patient was told that, in popular language, he had actually forgotten how to move his muscles, and that he required to be shown how to do so—in other words, he must be re-educated. There was a widespread impression among the laity that these cases were cured by electricity and massage; this was an entire misconception. The electrical current was undoubtedly often of great value in demonstrating to the patient that the muscles had not lost their ability to contract, but it was the suggestion and persuasion employed by the operator, and not the

electricity, that brought about the cure. Certainty in diagnosis on the part of the physician, and confidence from previous experience of his powers to convince the patient, were two essential requisites for success.

A few remarks were then made regarding the value of isolation, and of the mental atmosphere in the treatment of the functional neuroses.

Note.—There are certain matters to which it is inadvisable to refer before a patient suffering from functional paralysis. An essential point in the prognosis of these cases is the desire to get well. The soldier's will to recover is no doubt often modified by the fact that he may, when recovered, be returned to the fighting line, by fears or doubts associated with the recollection of the experiences through which he has passed, by thoughts of his family and home responsibilities, and sometimes, it is true, by satisfaction with his too sympathetic attendants and too comfortable surroundings. Appeals to his sense of duty and patriotism may be quite unavailing. When the active desire to get well is absent, this may be brought about by incentive. The rapidity with which improvement occurs in some cases, when the soldier knows that he will not again be sent on active service, is often remarkable. When the paralysis has persisted for long and the patient has obviously no strong wish for recovery, Capt. Bramwell has sometimes obtained excellent results by the following expedient: He tells the soldier that he knows he is anxious to get well as soon as possible, and is only natural, and that he feels certain that he will submit to any form of treatment which will bring about the desired result. He then tells him that the state of his nervous system is such that he requires absolute rest. He places him in bed behind curtains in a ward, admits no one to see him, gives him milk as his only article of diet, allows him no letters and no tobacco. This therapeutic procedure, in which a *vis à tergo* is adopted under the guise of treatment, is often successful when other measures fail in inducing that wish for recovery which is essential. As improvement occurs, the rigidity of the *regime* is slackened. The method is particularly useful when there is reason for believing that the patient is inclined to exaggerate his disability.

Then followed a demonstration on "Provisional Peg Legs" by Lieut.-Col. CATHCART, R.A.M.C., and Major RANKINE.

Lieut.-Col. CATHCART explained that the supply of temporary or provisional peg legs for soldiers who had lost a leg had only been introduced into British hospitals since the war began, but that the value of these appliances was being appreciated more and more every day.

The objects to be attained by their use are:

- (1) To obviate the need of crutches, which, besides being cumbrous, frequently cause musculo-spiral paralysis.
- (2) To hasten the shrinkage of the stump, which takes place so rapidly when an artificial limb is worn that the renewal of the bucket frequently becomes necessary within a few months of the first fitting.
- (3) To train the man in the use of an artificial substitute for his lost limb.

The requirements of such an appliance are that, besides being efficient, it should be cheap, light, easily made, and quickly applied.

Many different forms of provisional peg leg have been advocated, and several have been tried at Bangour with Major Rankine's assistance, but none have met the requirements so well as the "Belgian Pylon," the only pattern now employed at this hospital. Major Rankine has entire charge of the supply of these peg legs, and has introduced many minor improvements in detail of construction.

They consist of a light wooden frame-work, which any carpenter can make, with a felt-lined bucket of plaster-of-Paris bandage incorporated with the frame-work. Major Rankine finds that, after he has obtained the necessary materials and has been able to train his assistants, the time required for an ordinary case is as follows:

To make the frame-work about half an hour, and to adapt it to the stump about half an hour. When the plaster has set the appliance is removed for drying. Next day the man is able to use it, and walks off with the aid of a walking stick.

Major RANKINE showed a number of soldiers who had just been supplied with these provisional peg legs. In the case of very short stumps below the hip and knee respectively, he explained what additional details were required, *vis.*, a pelvic band in the one case and steel or elastic supports to the knee in the other. He pointed out how simply the plaster-of-Paris bandage lends itself to the accuracy of

the fitting of the sockets, and to the adaptation of these extra pieces of mechanism, without which such cases could not be fitted at all.

The success attained in this department of the working of the Edinburgh War Hospital was much appreciated by those present.

In proposing a vote of thanks to the demonstrators, Dr. BOND said: "Before we go I should like to say there is one thought in our minds, and that is that we would like to express our thanks to those who have given us these most interesting demonstrations. They have been a revelation to a large number. We know the amount of trouble that has been taken, and we want to express our thanks to those who have organised the demonstrations, and to those who have been able to show us so much."

This was seconded in appreciative terms by Lieut.-Col. W. R. DAWSON, R.A.M.C., and carried by acclamation.

Mrs. Keay's "At Home" pleasantly concluded the meeting.

CORRESPONDENCE.

To the Editors of the JOURNAL OF MENTAL SCIENCE.

MY DEAR SIR,—I happened to run across the article on "The Psychology of Fear," recently written by Sir Robert Armstrong-Jones, in the issue of the *Journal of Mental Science*, of July, 1917. I am not a psychology professor or a professional psycho-analyst, but I was so impressed with the article that I am compelled to make a criticism of it.

I am glad to see Sir Robert take a step in advance of most psychologists in maintaining the existence of a conflict of bodily reactions in the case of fear. However, like others of his tribe, he still seems confused in his distinction between instincts and emotions. He makes these two statements: "The fear of solitude, of being without protection, etc., are notable instances of inherited instincts;" and "To some natures fear becomes a mental tonic, but perhaps other emotions . . . help to create the motive for action."

He thus classes fear as both an instinct and an emotion. Possibly he, like James, regards fear as an emotion only in its more complex stages, with no distinct line of division between the two forms of reactions. He seems to assent to the following order of events in the arising of consciousness, which I believe he credits to MacDougall: (1) Perception of some "existing fact," (2) which sets up reflexly some bodily disturbance, (3) which commotion is apprehended or realised. These three phenomena are respectively stimulus, instinct, and emotion. Sir Robert himself says that an instinct "attended with a mental side is signified by the term 'emotion.'" It necessarily follows that instinctive and emotional reactions do not overlap, but are entirely separate and distinct. The instinct is an unconscious, inherited reaction, but when two or more assert themselves at the same time they must necessarily clash, which results in the arising of consciousness (for the purpose of consciousness is to co-ordinate these conflicting reactions) and the emotion. All these bodily reactions are purposive, in the sense that they are teleological.

In the case of fear, we will find that the conflicting instincts are those of curiosity and flight. There are an indefinite number of kinds of such reactions, depending upon their intensity and general characteristics. The instinct of curiosity may be one of inquisitiveness or wonder, and that of flight one of concealment, while the emotion may be terror, fright, anger, timidity, or some other emotion akin to fear.

"Although danger may be a cause of fear," says Sir Robert, "there are many instances of strong and adventurous persons who long to meet danger in order to conquer it." Using the principles already outlined as a basis on which to work, we cannot say that danger necessarily produces fear. There may be fear without danger and danger without fear. There may be the gravest kind of danger, but if either the instinct of curiosity or that of flight is not present, fear will not be experienced.

When the miner lights the fuse for the blast the instinct of flight compels him to run, but he is not frightened. The instinct of curiosity does not assert itself because he is experienced, and knows when the explosion will take place and what its force will be. If one is fully determined to face danger he may eliminate the assertion of the flight instinct, and thus overcome fear. The experiences of big game hunters bear out this statement. In the *Outlook* (New York) several years

ago was portrayed a vivid description of the emotions experienced by a Montana minister attacked by two famished mountain lions one cold winter morning. While he was running his hair stood on end, and he trembled with fear, but when he could control himself sufficiently to turn round and face the beasts he became very calm, although all odds seemed against him. Through the sudden and unexpected appearance of a freight train he lived to tell the story.

The overcoming of the flight instinct is seen clearly in the action of the soldiers at the Front. Henri Barbusse, in describing a charge, says: "We are now as men possessed; we have forgotten our fears, and all we want now is to meet the enemy face to face; we are lusting for blood." Sir Robert himself tells of a young officer who, being overcome by a sudden fear, began to tremble, but by an effort of will this passed off, otherwise his feeling was to get away from where he was. I believe this illustration discloses one of the most important contributions to mental science—the fact that the cure of fear lies in the will. The generally accepted theory has been that expressed by Helen Williams Post: "Fear, which is only another name for ignorance, is all that ails us. Fear is not a thing that one can drop in obedience to the will; it can only be overcome by an intelligent investigation that leads to a full understanding of it. That which we understand we no longer fear. Understanding alone conquers fear."

However, in the case cited of the mountain lion attack, where all reason showed torture and death to be imminent and certain, all the knowledge and understanding in the world would have been of no avail. Will power, and not knowledge, overcame this man's fear. Truth will make you free, but intellect will only hold the links; it takes something else to strike the blow that breaks them.

Most respectfully yours,

F. LEROY SPANGLER.

3543, 10th Street, N.W.,
Washington, D.C., U.S.A.
August 1st, 1918.

To the Editors of the JOURNAL OF MENTAL SCIENCE.

SIRS,—I am obliged to you for the courtesy afforded me to read Mr. Le Roy Spangler's criticism of my paper upon the "Psychology of Fear" in the *Journal of Mental Science* last year.

He refers to a misapprehension in the use of the terms "instinct" and "emotion," which he himself appears to share, for he states that in fear "we find that the conflicting instincts are those of curiosity and flight"; yet one is an emotion, and the other a so-called instinct. I confess that I experience a difficulty in appreciating a clear line of demarcation between instincts and emotions, and personally I would prefer to regard all the instincts as reflex actions, and, as we know, elaborate reflex acts may need even a more extensive nervous apparatus than an intelligent act.

The origin of the instincts is probably reflex, but as they become more teleological, and their ends become more adapted to the welfare of the organism, they tend to rise above mere reflexes, and to be expressed either without consciousness along congenitally prepared nervous pathways, or to rise and be presented to consciousness.

The modern definition of the instincts is "inherited perceptual disposition," and if this is accepted the instincts are clearly mental states. We know that they are best seen in the lower animals such as the social bees and ants among the invertebrates and in birds and some of the lower mammals among the vertebrates. Witness the migratory tendencies of birds and the constructive acts of the beaver, and although we have no means of reading mental states into these acts—for only in man can this be effected—yet there must be mental elements present as in man, and we often use the term "instinct" in animals to express mental states.

Further, I fail to see a distinct demarcation between "feeling" in the psychological sense and the emotions, unless it be in the organic visceral sensations which accompany the latter; yet there are probably some *hormones* with corresponding internal sensations accompanying every hedonic tone, as the experiments of Cannon appear to suggest.

My critic denies that danger necessarily produces fear; but if, as I maintain,

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fear is a biological reflex, then this primary emotion must be present in the unconscious mind, and I cannot conceive an actual present state of danger without the emotion (or instinct) of fear. But here we are upon the elusive territory of the subconscious, and is it possible to be unconscious of the conscious?—i.e., is it possible to have impressions without the mind acting?—or, in other words, is it possible to have a state of pure physiological activity present without mentality? I am unconscious of the various ears of corn and straws in a cornfield, although my reason tells me they are present; I hear the wave on the pebbled beach, but I am unconscious of the sound caused by each pebble. I think, judging by my actions, that there are many and different emotions in my own mind, but because they do not rise to consciousness I may be tempted to deny they are there.

Lastly, he refers to the control of the emotions by the exercise of the will, and I think the will rather than the intellect is the claim of man to rise to a higher sphere. It is well known that the assumption of a movement associated with an emotion tends to create the emotion. The work of the actor is of this kind. The substitution by an effort of the will of a movement contrary to the emotion that will often best control it. A boy whistles when he passes the cemetery at night; a girl who is annoyed will play her piece of music to divert her emotion, and a child is taught to count ten before replying in anger.

An assumption of calm will overcome an emotion. One cannot feel chivalrous or martial when leaning on a lamp-post with hands in pocket. The reason can do much to show the unreasonableness of an emotion, but it is the will-power that finally exercises the control, and I cannot help feeling that the muscular element of thought has been very inadequately studied in connection with the will. I am obliged to Mr. Spangler for his criticisms.

I am, Sirs,

Your obedient servant,

ROBERT ARMSTRONG-JONES, M.D.

105, Harley Street, W.;
September 10th, 1918.

EXAMINATION FOR NURSING CERTIFICATE.

List of Successful Candidates.

FINAL EXAMINATION, MAY, 1918.

Chester County.—Sarah J. Partin, Minnie Lloyd, Margaret J. Griffiths, *Lily E. Robinson, Nellie Griffiths, Annie Elizabeth Eyton, Alice Crook.

Macclesfield, Chester.—Annie M. Craib, Jeanie Killough, Annie M. Peden, Sarah J. Leigh, Minnie Leigh.

Cornwall.—Annie Redmond.

Carlisle.—Lena Hardy, Ebenezer J. Barton, Hannah Willis, Flora Gray.

Severalls, Essex.—Kathleen V. Murphy, Henrietta E. Hood, Elizabeth A. Robinson, Ethel A. Kent, Ethel F. Randle, Ellen A. Davies, Eleanor W. Griffiths, Arthur H. Markland.

Bridgend, Glamorgan.—Edward Byrne, Tom Griffiths, Henry A. Murphy, Clara A. Prew, Sarah J. Tarr, *Maggie Jones, Elizabeth M. Williams.

Barming Heath, Kent.—Mildred C. Tiver, Mildred A. Oliver, Lilian Owen, Annie F. Burridge, Ellen Cotter, Lillian M. Leverett.

Rainhill, Lancs.—Alice Pemberton, Elizabeth M. Taylor, Mary Coghlan, Annie E. Yates.

Cane Hill, L.C.C.—Olive Jibb, Emily A. E. Amos, Olive M. Clavey, Annie M. Talbott, Kathleen C. Mawn, Laura L. Payne, Lilian M. Corby.

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Colney Hatch, L.C.C.—Louisa Jones, Elsie Fisher, Kathleen M. E. Shaw, Alice N. Fenn, Lois Root.

Hanwell, L.C.C.—Rosa G. G. Brentnall, Jenny Lapidge, Rose Young, Emily C. Manley, Rose M. Brown, Alice Wildin, Violet G. Smith, Edith L. Knight.

Bicton, Shropshire.—Catherine A. Hogan.

Long Grove, L.C.C.—Grace Banwell, Horatio J. Johnson, Edmund J. Tomkins.

Cheddleton.—Ada Roulston, Lily Noble, Florence A. Ledbury, Jessie M. McDonald.

Netherne.—*Alice E. Sparks, *Florence Vickery.

Hellingly.—Ethel M. Tindall, Marion Costigan, Winifred M. Keep, Mary McPartland.

Derby Borough.—Annie Hall, Lilian Goodall.

Barnsley Hall, Worcester.—*Elsie May Colley, Ada Alice Seeley.

Hull City.—Mary Imelda Carlin, Floris Evangeline Lloyd, Kate Marr, Ella B. Watson, David Stynes, John D. Moody.

Leavesden.—Adeline Rockliffe, Annie Baker, Grace Ethel Maurice, Mary G. Hickman, Margaret Blew, Winifred Cox, Elizabeth Marchant, Mildred E. Neate, Nellie E. Phair, Florence E. Murray.

Leicester Borough.—*Elizabeth Starkey, *Alice E. Whomsley, Miriam Hills, Ethel Preece.

Notts City.—Edith A. Pearce.

Portsmouth.—Grace E. Norris, Myrtle Phillips, Nellie L. Hill, Florence M. Webley, David Wren, Ivy W. Cotton.

Sunderland.—Mary Jopling, Violet Lockey.

Bootham Park.—Isabel K. Young.

Brislington House.—Margaret E. Carr.

Camberwell House.—Gladys F. M. King, Jean Elisabeth Prall, Dorothy L. Phelps, Adelaide G. F. Hart, Beatrice Richards.

Coton Hill.—George A. Wilshaw.

Holloway Sanatorium.—Jessie K. Gray, Florence Barker, Marion L. Boussier, Ethel C. Holdaway, Muriel Perkins, Winifred M. E. Healey, *Brenda H. Peters, Edith M. Telfer.

New Saughton Hall.—Isobelle Black.

The Retreat, York.—*Ada M. Ellis, Winifred A. Willey, Lucy Dorling, *Annie S. Higgins.

St. Andrews.—Katie M. Potter, Lewis Duckett.

Ticehurst.—Eva C. Browning, *Mary C. Clarke.

Aberdeen District.—Margaret R. Sutherland, Eliza A. S. Noble.

Argyle and Bute.—Alexandrina McDonald, *Catherine Macleod.

Ayr.—Margaret O. McGill, Grace Mitchell.

Crichton.—Robert Neill, Robert S. Purvis, William Scott, Laurence Walls, Viola Potts, Grizel E. Brand, Margaret Cameron, Jessie Sidey, Agnes W. L. Ednie, Mary S. McCartney, Elizabeth Hendry, *Jessie A. Bowie, Annie Brown, Jessie K. Cameron, Lizzie A. Reid, Mary Munro, Isabel Campbell, Janet G. D. McDowall, Margaret D. Eadie, Sarah E. Johnston, *Ethel McLennan, Annie McCullen, Victoria F. Shelbourne, Mary Macdonald, Ellen McCaw, Joseph Dunn.

Dundee District.—Mary M. Duffy, Mina Lovie.

Edinburgh Royal.—Mabel A. Nicoll, *Mary J. Brown, William J. Fraser, Sarah M. Richmond, Christina B. Donaldson.

Craig House.—Mary T. Brady, Isabella M. Cromarty, Jessie A. Flett, Mary Finnigan, Margaret W. Young, Margaret M. McLean, Elise le Gentil, *Annie H. Lawrence, Ellen Morrison, Grace McHaffie, Margaret Brady, Jean Davidson, Mary R. Robertson, Mary E. Shearer.

Fife and Kinross.—Mary Duncan, Kate Lobban.

Gartloch.—Elizabeth Black, Allison R. Russell, Katie A. McKinnon, Mary S. Laing.

Gartnavel.—Catherine McKerchar, Annie Marshall, Annie B. Lorimer, Agnes Barbour, Annabella Finlayson, Isabella Eadie, James Cameron.

Woodilee.—Mary Denny, Margaret B. McLean, Marion Lithgow, John Welsh, Mary Kennedy (or Bownas), Ellen Devins, Annie J. M. Macpherson.

Humkhead.—Elizabeth D. Gibson, Jeannie McBain, Anna McDonald, May Travers.

Inverness.—Maria S. Sutherland, Margaret Campbell, Sarah Macnab.

Lanark.—Mary Purvis, Elizabeth Singer.

Melrose.—Charles Cowie, *Lizzie W. C. P. Webster.

Montrose.—Margaret Potter, Margaret Munro.

Murray.—Agnes M. Ross.

Dykebar.—Marion Cameron, Murdoch Mackay.

Riccartsbar, Paisley.—Robert J. Mitchell.
Enniscorthy.—Arthur Doyle.
Portrane.—Patrick Glennon, John Cullen, Bartholomew Dowdall, Mary E. Carolan, Bina Fahy, Ellen Kelly.
Richmond.—Elizabeth Doyle.
St. Patrick's.—Margaret Hogg.
Smithston, Greenock.—William Cameron, *Isabella J. Murray, Thomas S. Goldie.
Banstead.—Jean Curtenelle, Elsie E. Gill, Jeanie A. F. Fisher, Susan E. Howard, Emily Trevorror, Naomi R. L. Langley.
Wadsley.—Sydney A. Culverwell.
Warwick County.—Elsie Jones.
 (The successful candidates from South Africa not included in the above list.)

* Passed with distinction.

PRELIMINARY EXAMINATION, MAY, 1918.

Berks County.—Olive M. Allum.
Chester County.—Elsie Littler, Margaret H. Timmis, Margaret Langton, Evelyn Bailey, Edith Taylor, May Jeffries, Emily Pritchard, Lily Summerfield, Honora Doherty, Daisy Roberts, Violet V. Vernon, Betty Williams, Beatrice Lewis.
Macclesfield, Cheshire.—Marjorie A. Barnett, Isabella M. Darragh, Elizabeth E. O'Connor, Maude L. Bloor, Celia Moore, Frances Dale, Bessie Davies, Kathleen Le Cras, Alyce L. Potter, Gertrude Shallcross, Ethel Ascroft.
Cornwall County.—Gladys Coleman, Hannah M. Cooksley, Lily Bassett.
Carlisle.—Elizabeth Moffat, Hannah Graydon, Alice Ranie, Anice M. Hodgson, Annie Bell.
Derby County.—Sarah A. Radford, Gertrude A. Webster, Janet Mycroft, Mary Burke, Dorothy E. Mordy.
Dorset County.—Louisa Stelling, Bertha Feltham, Annie Elligate, Anna Hennessey, Dorothy J. Evett, Annie M. M. Atkins, Marion McInerney, Alice Walshe, Bridget A. McDonnell, Kathleen H. Frampton, Norah B. Behan.
Brentwood, Essex.—Annie E. Rand, Rachel Parkin, Bertha H. Carne.
Severalls, Essex.—Mabel B. Button, Julia M. Wiles, Harriet Cole, Eva Gladys Brown, Jean Thompson Barr, Bessie B. Luscombe, Agnes M. Duncan, Evelyn Gray, Mabel G. Taylor, Florence Smith, Dorothy E. Finch, Frances J. Thompson, Lilian M. Hull, Roseanne McNulty.
Bridgend, Glamorgan.—Elizabeth J. Allen, Elizabeth J. Jones, Gwladys Llewellyn, Elizabeth Ann Roberts, Margaret Evans, Edith Lewis.
Isle of Wight.—Harriette M. Paull.
Maidstone, Kent.—Bertha Thompson, Frances C. Arnold.
Cane Hill, L.C.C.—Henrietta E. Love, Jane Keating, Stella M. South, Dorothy Williams, Myra Johns, Gertrude King, Lucy B. Webb, Mildred E. Sims, Florence R. Cook, Alma L. Sims, Edith M. Selwood, Mary A. Keane.
Claybury, L.C.C.—Margaret J. Gittins, Grace P. Baxter, Dorothy E. Harrison, Dorothy M. Parrish, Annie M. Jones, Katie Healy, Edith S. J. Reid, Katie Pritchard, Rosina M. Jarratt.
Colney Hatch, L.C.C.—Rose Elizabeth Bradshaw, Wilhelmina Gibson S. Brown, Myra Compton, Nora Annie Coles, Emily Maguire, Victoria A. Palmer.
Hanwell, L.C.C.—Janet Williams, Florence Marshall, Lillian May Bond, Madeleine Scholtus, Margaret A. Lovell, Gladys Griffiths, Gladys Helen Bullack, Minnie McGuinness, Winifred H. Bowler, Marie Plumb, Ivy G. Baker, Florence Keen, Margaret Morris, Jessie L. Winsor, Isabel E. M. Currey.
Long Grove, L.C.C.—Jessie L. Skuse, Mabel E. Meadmore, Lilian M. Blythe, Ann Jane Jones, Olive S. Jenkins, Honoria M. Byrne.
Napsbury, Middlesex.—Sarah Ann Christian, Lucy H. Downes, Annie Way, Elsie G. Rogers, Ethel M. Davies, Gertrude L. M. Thomas, Annie K. Richardson, Alice M. Bromley.
Abergavenny.—Agnes H. Pugh, Gwladys Waring Chilcott, May Price, Lena M. Ray, Sarah Lewis, Frances Talbot.
Notts County.—Florrie Leeson, Annie Gamble, Betsey Todd.
Bicton, Shropshire.—Sarah E. Davies, Louisa W. Cooper, Lily Brown, Sarah J. Rawlings, Nellie Blocksidge, Frances Nellie Dodd.

Cheddleton, Staffs.—Jennie M. Cassidy, Eva Mary Murphy, Mary McDonnell, Mabel Adeline Horlock.

Nethem, Surrey.—Teresa K. Quinn, Louie E. Chivers, Edith Hilda Harris, Ethel S. Wallcroft, Edith E. Kinch, Hanna McEllistram, Emily E. Coles, Violet Waters, Harriet Bastin.

Hellingly, Sussex.—Blodwen Hughes, Lillian Thompson, Doris L. Lucia, Nellie Cunningham, Elsie F. H. Thorne, Margaret Thomas, Amy Allerton.

Storches Hall, Yorks.—Winifred Holden, Annie Botham, Olive Usher, Elizabeth Myers, Williamina Morrison.

Barnsley Hall, Worcestershire.—Louisa Shutt, Emily S. D. Rawlings, Marion Whitehouse, Elsie M. Johnson, Edith M. Firmstone, Mary W. M. Goddard, Eleanor A. M. Brown, Ada R. Oakes, Mabel Oliver.

Winson Green, Birmingham.—Lilian M. Adams, Lilian M. Davies, Myfanwy Davies, Rose A. Shilvock.

Canterbury.—Alice M. Austin, Rosina S. J. Clark, Lucy M. Mortimer, Ruth Hopkins, Beatrice M. Wood.

Derby Borough.—Daisy A. Coulson, Edith A. Chambers, Frances A. C. Hulme. *Hull City.*—Florence L. Davey, Agnes Ingram, Annie Kirby, Elsie Robinson, Ethel M. Robinson, Ethel Souley, John H. Mechen.

Leicester Borough.—Ida Langfield, Gertrude Hickling, Bridget O'Halloran, Eunice F. Joyce, Lillian Soar, Rachel Burton, Kate Cocks.

City of London.—Helen Inglis.

Notts City.—Annie Clements, Maud Clements.

Portsmouth Borough.—Olive K. Newton, Daisy E. Bennett, Cissie A. M. Hutchens, Margaret E. Boobyer, Ivy B. Strange, Harriet M. Clifford.

Sunderland Borough.—Mary Hewitt, Hannah Shillaw.

Bailbrook House.—Ethel Ada Newth.

Bethlem Royal.—Elsie K. Lewis, Alice Maud Martin, Marion F. Mullenger.

Bootham Park.—Dorothy E. M. Robinson, Christina Watt, Sarah Hutchinson, Mary Ross Fearn, Elizabeth Jane Stewart, Florence M. Mitchell.

Brislington House.—Mabel E. Doling, Ada M. Adams, Jennie Alderson.

Camberwell House.—Elsie Everett, Mary S. Roberts, Vera H. Creighton, Gertrude Izod.

Holloway Sanatorium.—Ethel Chesterfield, Frances Mary Marks.

Middleton Hall.—Ada Bruce, Annie Freda Butters, Mary Jane Hodgson.

Retreat, York.—Charles James Allen, Frank Harwood, Louisa McKeever, Harold John Owles, Ada Jeanette Pettinger, Evelyn M. Torr.

Peckham House.—Winifred Ward, Dorothy Parker, Winnifred D. White, Annie Packer, Emily Salmon, George H. Case, William S. Griffin, George H. I. Bates.

St. Andrews.—Elsie B. Anderson, Elizabeth E. Biffen, Ralph L. Haynes, Arthur Easton, Ralph N. Easton, Hugh Owens, Walter Stafford.

Ticehurst.—Louisa Ford, Emily C. Fry, Ivy V. Holtham.

Warneford, Oxon.—Miriam Andrews, Evelyn E. Swadling, Barbara J. Mason.

Aberdeen Royal.—Jessie Davie, Isabella Moir, Frances Ross.

Aberdeen District.—Barbara M. Walker, Lizzie A. S. Duff, Ida Smith, Margaret Rust, Annie B. Connon, Elizabeth H. Gordon, Maggie Johnston, Mary J. Harvey, Annie Marr.

Argyle and Bute.—Annie McPhee, Mary F. Martin, Agnes McC. Bell, Marion McDonald, May McGilfs.

Ayr.—Agnes G. Sim, Annie F. Goldie, Isabella M. Thomson, Frances J. McLaren, Georgina H. McLaren, Agnes Blackwood, Christina Littlejohn, Rosina McG. McCulloch, Grace H. Campbell, Agnes Herbert, Mary A. Kennedy, Elizabeth L. Gillespie, Jeannie S. Baillie.

Crichton, Dumfries.—Margaret Blackwood, Rebecca McQuarrie, Peggie Macrae, Elizabeth J. Moodie, Elizabeth D. Ramage, Delia Rowan, Jeannie Raffin, Jeannie Muircroft, B. Delia Cawley, Maggie Doherty, Elizabeth J. Beaton, Maggie A. Buchan, Mary W. Brand, Sarah J. Wilson, Mary E. Finch, Elizabeth M. Hickey, Jeannie T. Sanderson, Mary H. Sanderson, Catherine R. Hunter, Kathleen Simons, Sarah Roseweir.

Dundee Royal.—Nellie Morris, Isabella Miller, William Leith.

Edinburgh Royal.—Jean Shannon, Mary Ward, Matilda Adams.

Elgin.—Florence McRae.

Fife and Kinross.—Marion W. Coffield, Isobel Corsie, Flora M. Fraser, Annie Mitchell, Isabel Nuthall, Margaret J. Slessor, Isabella Turner.

Gartloch.—Angus Sinclair, Helen M. Deas, Mary Deas, Annie Diack, Mary A. Raeburn.

Craig House.—Margaret A. Nicholson, Williamina J. Imray, Marion S. McKizen, Mary Cochrane, Elizabeth Milne.

Gartnavel.—Robina Brown, Mary Collins, Brigid Martin, Mary Molloy, Catherine McArthur, William Arrol, Mary McKenzie, Annie McMillan, Betty Orr, Isabella Russell, Euphemia Churchman, Jean C. Greer.

Woodilee.—Grace Inglis, Agnes Maitland, Elspeth P. Taylor, Barbara G. Martin, Alexandrina Melville, Jessie H. Dunsmore, Jane Higgins, Jessie Angus, Hellen Chisholm Mathieson, John H. Gavin, Cornelius J. Brooks.

Hawkhead.—Mary Barclay, Isabella Berry, Meta Y. McFarlane, Margaret Robinson, William F. Hepburn.

Inverness.—William Campbell, Florence A. Boiteux, Isabella D. Stevenson, Catherine S. Stevenson, Margaret B. Hendry.

Lanark.—Jeannie C. Gray, Janet M. Cochrane, Isabella Boyd, Agnes R. Hutchon, Mary J. A. Titterington, Margaret Mullin, Margaret Connor, Gertrude H. Howie.

Melrose.—Margaret Provan.

Montrose.—Maggie S. Balnaves, Chrissie Innes, Ella E. C. Y. Gibson, Mary J. Duthie, Margaret Kennedy, Jane Bowen, Susan Smith.

Murray.—Mary Allan, Annie McLeod.

Dykebar.—Margaret Hart, Norman MacKinnon.

Ballinasloe.—Mary Marner, Mary O'Connor, Margaret Muldoon, Teresa Fitzpatrick, Kathleen Dunleavy, Angelina Kilroe, Mary Kenny.

Enniscorthy.—Annie O'Farrell.

Mullingar.—Mary Farrell, Mary Anne Dinnigan, Bridget Garry, Mary Mullin, Margaret Tiernan, Kate Maguire, Patrick Devine, Thomas Fry, Mary Duffy, Ellie McCormack, Mary Anne Reilly.

Portrane.—Maria Flannery, Margaret Gilmartin, Jane Murphy, Nora Helena McArdle, Lillie Green, Michael Connolly, Thomas Browne, John Callahan, Andrew Byrne, Edward Hughes.

Richmond.—Martha Connell, Elizabeth Dalton, Christopher McEntagart, Cornelius Horan, Annie Lyons.

St. Patrick's, Dublin.—Rebecca M. Belton, Thomas Byrne, James Callaghan, Samuel Newman, John Stapleton.

Smithston.—Alexander MacLean, Annie E. McCarroll, Bridget McCormack.

Banstead.—Mary Jane Massara, May Taylor, Florence Ruth Morse, Catherine Mary Lloyd, Annie Elizabeth Clarke, Marcelle Walters, Margaret Priscilla Day, Lilian Ruth Byram, Violet Winifred Cownden, Dorothy Rose Powell, Lily Dunn, Ellen Eliza Duncombe, May Gladys Waylan, Bridget Teresa Ryan, Lucy Eleanor Pownall, Maria Josephine Fenton, Lucy Jordan.

Haddington.—Rita Mary Sinclair, Jean Lawson Skinner, Helen Deagman Dobie.

Warwick County.—Lucy Davies, Rita Storey, Marion O'Connell, Nellie Williams.

SOUTH AFRICA.

Preliminary.

Pretoria.—H. A. E. C. W. Montjoie, I. M. Cloete, G. du Plessis, G. E. Keenan, J. W. Nell, A. H. Lotter, P. F. Rautenbach.

Grahamstown.—Margaret Mary Rainnie Andrew.

Pietermaritzburg.—J. W. Delpont, E. M. Boik.

Bloemfontein.—J. G. Bender.

Valkenberg.—J. C. S. Lotter.

OBITUARY.

WILLIAM REID, M.D. Aberd.

Physician-Superintendent, Royal Asylum, Aberdeen.

THE Scottish Division has again to record the death of one of its oldest members in Dr. Reid, who died at his residence on September 3rd.

Dr. Reid had been connected with the Aberdeen Royal Asylum for the long period of forty-two years; he entered it as Assistant Physician in 1876, and on the death of his predecessor, Dr. Jamieson, he was appointed to succeed him in 1885.

He lived to see the reconstruction of this large asylum almost completed and no detail in the scheme escaped his attention. He was particularly proud of the hospital block, which is not surpassed anywhere in the country.

In mental diseases Dr. Reid was extremely conservative; he would look at no other book but "Clouston" until, no new and revised edition appearing, he adopted De Fursac's well-known manual. Of all the varieties of insanity he was most interested in primary dementia.

Dr. Reid was a big man in every way. His handsome presence and indefinable personality will be missed in Aberdeen for many years to come. He was absolutely adored by his patients; as, though he did not carry his feelings on the surface, his winning personality and overflowing kindness of heart made him an ideal mental physician. His old assistants all over the world, as well as his staff, possessed an affection for him such as is given to few men. The Chief hated humbug, meanness, self-advertisement, and priggishness of any kind, and expressed himself pretty forcibly at times when any examples of such came to his knowledge. Though of a forgiving nature in most instances, he never forgave anyone whom he had found out "not playing the game." He lectured on psychiatry to many generations of Aberdeen University men, and was seen at his best when describing the clinical symptoms presented by the cases he brought before them.

Dr. Reid did not care for the artificiality of social functions or meetings and was seldom seen at these, but he liked to entertain at his own house. He loved the open air, and his chief recreations were shooting and golf. He was passionately devoted to the latter game, and his fine figure, clothed in the favourite brown suit, was well known on the links of Balgownie, Cruden Bay, and Lossiemouth. His library contained every known book on the game; and he showed a prevalent and forgivable human weakness in buying successively the clubs made by the greatest players of the day, and it was amusing to see the big man wielding the initial very light clubs used by Harry Vardon. He had a tendency to "slice," which he attributed to loosening his left hand at the top of the swing; to circumvent this he had a thin metal cover, surrounded with the ordinary leather grip, made to encircle the upper half of the handle of his clubs; this cover revolved sufficiently to allow of the left hand preserving the grip at the top of the swing. The correspondence which ensued with the editor of a well-known golfing magazine, who did not approve of the contrivance, caused him great amusement. Needless to say, the "slice" remained, and he discarded the above invention and adopted another to cure his "slice" in the form of a strap, which, however, made it impossible for his caddie to withdraw one club from his bag without also withdrawing the others. A favourite caddie took the law into his own hands and removed the club straps while his master was at lunch. The resulting interview later was something to be remembered. He fared better with a tea-urn he invented for his patients, and the writer has never seen anything to beat it for institutional use.

Dr. Reid's home life was delightful, and to see the big fellow lying on the floor building brick houses with his youngest daughter is a pleasant memory. He was devoted to all children, and they to him.

The war adversely affected Dr. Reid in many ways. His senior assistant, Dr. Kellas, to whom he was much attached, was killed at Gallipoli; and, later, two other assistants—Drs. Dewar and Legge—were killed on other Fronts.

He is survived by his wife and two daughters. Prof. R. W. Reid, of Aberdeen,

is his brother; and another brother, Major-General Sir Alexander Reid, K.C.B., who made a great reputation for himself in India and China, died a few years ago. Prof. R. G. McKerron, of Aberdeen, is a brother-in-law.

H. M. DE ALEXANDER.

NOTICE TO CONTRIBUTORS.

N.B.—The Editors will be glad to receive contributions of interest, clinical records, etc., from any members who can find time to write (whether these have been read at meetings or not) for publication in the Journal. They will also feel obliged if contributors will send in their papers at as early a date in each quarter as possible.

Writers are requested kindly to bear in mind that, according to LIX(a) of the Articles of Association, "all papers read at the Annual, General, or Divisional Meetings of the Association shall be the property of the Association, unless the author shall have previously obtained the written consent of the Editors to the contrary."

Papers read at Association Meetings should, therefore, not be published in other Journals without such sanction having been previously granted.

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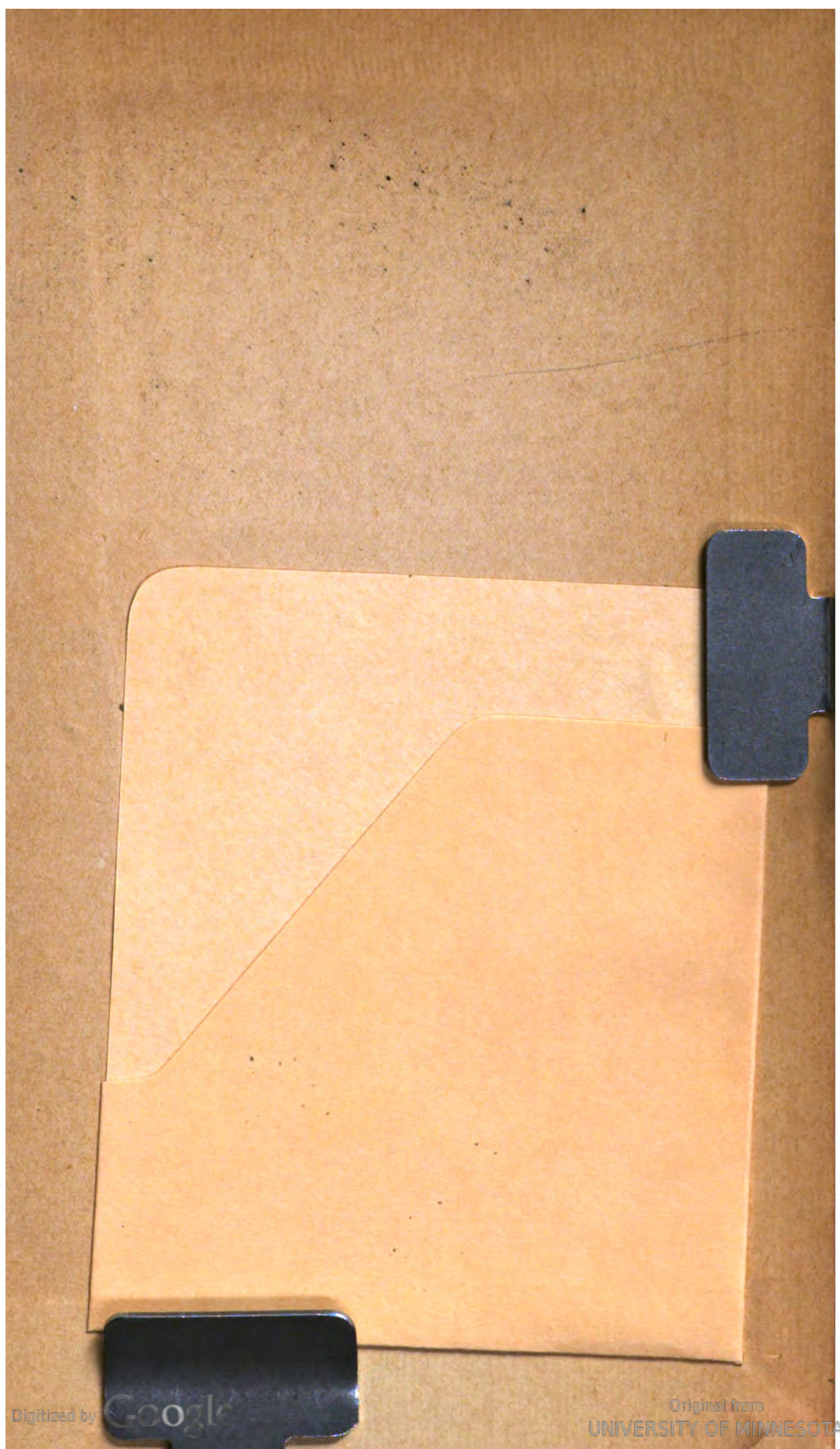
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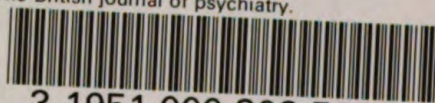
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